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Changing Accommodation for Non-Resident Staff in Hospitals

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CHANGING ACCOMMODATION FOR NON-RESIDENT STAFF IN HOSPITALS

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CHANGING ACCOMMODATION FOR NON-RESIDENT STAFF IN HOSPITALS

INTRODUCTION

Changing accommodation for non-resident staff is important yet its provision is ill-defined. It involves difficulties which are complex and varied and each year the situation becomes more acute. This type of accommodation is not simply a question of convenience. The promotion of staff welfare and the maintenance of morale are also involved. Older hospitals are faced with the problem of finding space; hospitals of the future are to some extent an unknown quantity as regards patterns of staffing.

This report identifies various aspects of the planning and management of non-resident staff changing accommodation and reviews trends relevant to future planning. Staff changing requirements of a specialised character, e.g. in operating theatre suites and infectious diseases units have not been reviewed in this report nor has the provision of general cloakroom accommodation for visitors.

The study team* gratefully acknowledge the help received from other members of the staff of the Scottish Hospital Centre and the advice given by many individual officers of the Hospital Service.

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The presentation is in three parts:

Part one
A review of literature, guide material and planning policies.

Part two
A statistical survey of non-resident hospital staff in Scotland, a report on a 24-hour survey of a purpose-designed unit using the individual locker system of clothes storage, and an account of visits to industrial concerns.

Part three
A systematic appraisal of points relevant to future planning.

Part One: REVIEW OF LITERATURE

While the need to provide adequate changing facilities for the increasing number of non-resident hospital staff has been recognised for several years, problems associated with the planning of this type of accommodation still exist. A considerable amount of literature has emerged on this subject in recent years; a selected bibliography is given at Appendix C.

1 ESTIMATION OF NUMBERS

1.1 One of the first requirements in planning non-resident staff changing accommodation is the total number of staff to be accommodated. It cannot be emphasised too strongly that this aspect is of the utmost importance in the initial planning stages. It has been apparent in the past that non-resident staff estimates often fall short of the number employed when the hospital comes into operation. Accommodation initially considered adequate thus becomes cramped, crowded and totally unsuitable for the number of staff it is required to contain.

1.2 This problem has been tackled by various authorities by applying different formulae for nursing staff as, along with the domestic staff, they comprise the major portion of hospital non-resident staff. In Scotland in 1966 non-resident nursing staff made up 46% and domestic staff 34% of the total non-resident staff employed in hospitals. There have been several publications[8, 25–28, 30, 48] on staff establishments in an effort to produce objective indices. The majority of these have been based on work measurement techniques, but no one method has won general acceptance; all present certain difficulties[12, 22, 24]. Problems and difficulties in assessing nursing needs were published jointly by the King's Fund and the Royal College of Nursing in 1966[22]. In the summary of the report the nature of the problem was expressed as follows:

> "This memorandum provides no magic formulae for determining the number of nurses needed in a hospital. It does, however, point to the complexity of the problem—the necessity of not looking at nursing numbers in isolation, but for the needs of patients in both wards and departments to be considered in every hospital."

1.3 The Ministry of Health circular H.M.(63) 83, Residential Accommodation for hospital nursing and midwifery staff,[34] gave general guidance on the proportions of non-resident staff to resident nursing staff. Of the trained staff one-third was regarded as resident and two-thirds non-resident. Of the total number of student nurses, one-third were considered as being non-resident, and of the pupil nurses, one half were regarded as non-resident. There is difficulty in projecting present estimates to meet future requirements. Although there have been several publications in recent years on the need for manpower planning in the hospital service[5, 6, 9, 13] there are no published projections of the estimated number of non-resident hospital staff to be employed in the United Kingdom in 1980 or even in 1970.

1.4 Questionnaires were sent by the Scottish Hospital Centre to selected Hospital Boards asking if they could give any indication of the method used in estimating the number and categories of staff including the proportion allowed for part-time staff when the schedule of accommodation was being compiled.

The following are extracts from the replies received:

1.4.1 **A District General Hospital**

> "It is difficult to answer the question as to how one arrives at the number to allow for, but very briefly, we worked on this system. We took the straight number on the establishment for the final hospital. As far as nursing staff was concerned we estimated that one-third would be resident and two-thirds non-resident. This is only an average as e.g., if you have a large number of student nurses then the number of residents would go up. It does depend on breakdown of establishment as well as actual numbers. We also reckoned that of the total establishment there will be at least half that number again because of part-time equivalents. You will appreciate that this is still, to a certain extent, guess work, as no one can predict accurately."

1.4.2 **A Regional Hospital Board**

" We use the guidance contained in the Building Note, that is, of the trained staff one-third resident and two-thirds non-resident. Of the total number of student nurses, one-third are regarded as being non-resident. Of the pupil nurses, one half are regarded as being non-resident. Having ascertained the whole-time equivalent, we add 20% to this in order to calculate the actual number of staff to be catered for."

1.4.3 **A Regional Hospital Board**

" The problem has, of course, been in deciding the best method of calculating the number of staff involved and the following broad principles have been used. The first decision is of course to determine the total number of staff required for the proposed development and as you will appreciate this is based in the main on outpatient activity, consultative sessions and beds and areas for accommodation. The medical and nursing need being based on the clinical and non-clinical activities and bed complement and the domestic staff being based on the number of rooms and the areas. The assessment of portering staff is at present achieved on an *ad hoc* basis, but a working party has been formed to investigate the standards of portering staff in hospitals, the findings of which have not yet been published.

When one has achieved the total staff requirements, the number of resident staff is deducted, this is based on the knowledge and experience of that particular region bearing in mind the trends which may be known for the future, and the guidance given in the Ministry of Health Building Note.

The balance of staff will of course be non-resident and to achieve the total non-resident staff requirements it is necessary to provide for the total number of staff, bearing in mind that the number of persons will be greater than the established whole-time posts. This has been achieved by assessing the regional norm (for different categories of staff on existing staff figures) over a period of years and allowing for the upward or downward trend. This may show that one-fifth of the domestic and one-quarter of the nursing staff are part-timers in which case the total number of staff is increased proportionately.

The resultant figure is therefore, the total need for the non-resident staff for which one has to provide locker accommodation and depending on the type of locker to be used the area per person can easily be assessed by adding the locker area to the passage area."

1.4.4 **A Regional Hospital Board**

" Here is what we propose to provide at a 978-bed general hospital whose second phase will be finished in 1972-73. 270 part-time nurses, 260 part-time domestic and ancillary staff (ancillary equals ward orderlies, porter, etc.). These figures are more of a ' guesstimate ' than we would like. We were forced to make them several years ago."

1.4.5 **A Regional Hospital Board**

" The space originally allocated for nurses and domestic staff for changing accommodation would provide locker space for about 450 persons. After further revision of staff estimates, however, it is now considered that the future nursing establishment is of the order of 515 and the domestics of about 130 whole-time persons. We appreciate that the original provision is inadequate but fortunately we have some ' vacant ' space adjacent which we will use to provide the additional locker space necessary which we estimate to be of the order of a total of 760 to allow for part-time nurses and domestics."

1.4.6 **A District General Hospital**

" As far as I can discover the method used was simply to calculate the number of non-resident staff in the different categories for which the changing accommodation was to be provided. The numbers included a small allowance for an anticipated expansion in non-resident staff from the opening of a new out-patient block which, in fact, occurred some two years later. I have been unable to discover why the changing accommodation for the non-resident domestic and ward orderly staff was

omitted from the new building except that possibly the cost limit excluded it.

Since the opening there has certainly been an increase in all grades and categories in the number of non-resident staff requiring changing accommodation. In this respect, the estimates proved inadequate, and this was as a result, partly of the extra staff taken on at the time of the out-patient development proving in excess of numbers originally allowed and perhaps more important, because of the tendency of more nursing staff to live out and for more part-time staff to be taken on in all categories."

1.5 The difficulty in defining trends is due to many factors, including the changing social pattern, shorter working hours, longer holiday periods, advances in medical treatment and nursing care, and the introduction of new grades of hospital staff. At a much more basic level the availability of staff depends to a great extent on local housing, transport, marriage, the location of the hospital, its personnel policies, alternative employment and the hospital's rating in public opinion.[1, 11, 23, 29, 45, 46]

2 HEALTH AND WELFARE OF EMPLOYEES

2.1 " In many new buildings as well as in most older ones amenities fall far below the standard one would expect. Important in themselves these amenities reflect a company's attitude towards its employees. The reverse is also true; well planned, well constructed, well administered amenities are seen by all for what they are—a sign that the company really cares about its employees."

These comments refer to industrial buildings,[21] but might have been applied equally to hospitals—which have, in recent years, been compared with industry especially in the managerial and administrative spheres.

2.2 From social surveys carried out by M. G. Auld[1] and the Dan Mason Committee[45] and other sources, it would appear that the lack of staff welfare accommodation and its poor quality contribute substantially to recruitment problems and the high turnover in the hospital service. On facilities for part-time staff in hospitals, Miss M. G. Auld[1] states:

" This is one of the biggest problems in older hospitals where all accommodation was geared to the nursing staff being resident. As more nurses took accommodation outside the hospital precincts, lockers and space had to be made available for them to change and store clothing. This coupled with the increase in part-time staff has proved a seemingly insurmountable problem. The part-time staff appear to be the greatest sufferers, 38% of the 681 working nurses interviewed had no changing rooms or lockers in which to leave outdoor clothing. The need for adequate locker space and rooms in which to house them should be compulsory in all new buildings. It is however apparent that hospital planning authorities are still unaware of the numbers and requirements of part-time staff. A new hospital opened in October 1965 had room for approximately 24 lockers for part-time staff, all too small to hold the nurses' possessions. Consequently, rooms all over the hospital are hurriedly being converted to house the enormous number of part-time nursing staff who have been engaged."

In her conclusions Miss Auld says:

"'A senior administrative officer should be appointed who will deal with the reception and with the welfare of part-time personnel. The necessity for planning adequate lockers and storage space for part-time staff cannot be over-emphasised. In planning any new buildings, space for part-time staff must be incorporated in the original plans and not, as is repeatedly happening, hurried alterations in often completely inadequate space, as hospital administrative staff appear in many instances to be taken by surprise that they employ part-time staff at all!"

2.3 The fifth report published by the Dan Mason Research Committee 1967[45] summarised replies to proposals for recruitment into part-time nursing employment, and noted that 23% of the registered nurses thought that proper changing or rest rooms would be advantageous in recruiting part-time nursing staff, while from the enrolled nurses 25% thought the same.

2.4 Criticism of the standard of hygiene, and the level of accommodation for staff of hospitals in this country is made in the Tunbridge Committee Report[36] on the " Care of the Health of Hospital Staff ". The Committee urged the early establishment of an occupational health service for all who work in the service; that cloakroom changing, and other accommodation for all grades of staff conform to the minimum requirements of the Factories Act and the Offices, Shops and Railway Premises Act; that rest room facilities should be provided; and in cases of serious illness, adequate provision for staff in sick bays or hospital wards. The report also censures present staff facilities and states:

> " One of the lasting impressions we gained in our visits to a number of hospitals was the widespread inadequacy and poor quality of such essential amenities as changing accommodation, rest rooms and toilet facilities. Some of the existing accommodation can only be described as appalling. Some does not even achieve the standards prescribed for accommodation that is subject to the Factories Act or the Offices, Shops and Railway Premises Act—and these are minimum standards which one would hope to see exceeded in any part of an institution devoted to the care of the sick."

The report also mentions the almost complete absence of any study or investigation of the effects of hospital environment and working conditions on health.

2.5 Building Note No. 18 (Administrative Department) recommends the provision of rest rooms for non-resident female staff. The King's Fund report of 1965[15] also recognises the need for rest room facilities but suggests that:

> " The size of sitting rooms envisaged in the Building Notes would be quite inadequate to meet the needs of increasing numbers of non-resident staff."

2.6 Some ambiguity exists as to the specific definition of a rest room whether it is a room for female staff to go to when they are not feeling well, or a room to be used as a waiting or sitting room. However, if female staff are unwell, the alternative to a rest room is either that they are sent home or are admitted to a ward. The function of a rest room should be defined before it is incorporated into the non-resident staff changing block.

2.7 Apart from the reasons already quoted for providing " rest room " facilities for non-resident staff, there is the additional advantage that such provision would free sitting rooms in nurses' residencies for the exclusive use of resident staff.

3 CHANGING FACILITIES AND ACCOMMODATION FOR CLOTHING

3.1 Imperial Chemical Industries Ltd. Report (1946)

Detailed information is contained in the publication " Amenities Standards in Imperial Chemical Industries Ltd."[20]. While of considerable help, it is dated 1946 and the I.C.I. authorities have stated that certain sections of the document are at present under review. Nevertheless, in the section dealing with clothes storage, useful information has been collected on floor area requirements, layouts and cost comparisons of the various schemes.

3.2 Ministry of Labour Report (1954)

Another informative publication is the " Safety, Health and Welfare Booklets No. 5, Cloakroom Accommodation and Working Facilities in Factories 1959, H.M.S.O."[39]. The introduction suggests that the essentials of satisfactory cloakroom accommodation include:

> " A separate peg or locker for each worker, which should bear the worker's name or work number. Ample space for changing clothes and boots. Provision for drying wet outdoor clothes in bad weather, and overalls worn in wet processes. Adequate precautions against theft. A high standard of cleanliness. Adequate ventilation and lighting."

Examples of layouts for cloakrooms are given and various methods for storing clothes. These include suggestions such as lockers with slanting tops to prevent the accumulation of dust, the tops of the shoe lockers forming convenient seats, and a more elaborate type of unit combining a clothes hanger and shoe basket. The booklet further stresses, though without details,

that adequate precautions against theft should be maintained at all times, since many employees are unwilling to use a cloakroom where security is not maintained.

3.3 King Edward's Hospital Fund (1959)

In 1959, the King's Fund[16] carried out a survey to provide guidance for a committee considering applications from hospitals wishing to provide improved changing accommodation for non-resident staff. It was noted that in recent years there had been a tendency for more nurses to live away from the hospital in which they worked, and that this had led to an increasing demand for suitable changing accommodation within the hospital for non-resident nurses as well as for other staff. The survey revealed some uncertainty among architects of the facilities to be incorporated in new hospital buildings, and a lack of standards which could serve as a guide for the future. The report pointed out that requirements were changing even between one hospital and another.

3.4 Legislation, 1961, 1963

Industrial legislation concerned with working conditions is contained in the Factories Act, 1961[10] and the Offices, Shops and Railway Premises Act, 1963[44]. These Acts require that premises maintain at least a minimum standard for changing-room facilities but neither offer detailed information on suitable storage units for clothes nor recommend any specified changing-room layouts. The Acts merely require provision for employees' clothing not worn during working hours, to be hung up or otherwise accommodated including facilities for drying such clothing. If clothes worn by employees are left on the premises there must be suitable facilities for accommodating and drying them.

3.5 Ministry of Health and S.H.H.D. Report (1963)

Another Ministry publication containing relevant information is " Clean Catering "—a handbook on hygiene in catering establishments 1963, H.M.S.O.[35]. In the section on staff cloakrooms the handbook stresses that workers can be expected to take pride in their personal cleanliness and appearance only if proper facilities are provided for changing clothes and for storing outdoor clothes during the day and working clothes at night. The preferred arrangement is one whereby a staff cloakroom is provided, distinct from but adjacent to the food preparation room and containing sanitary conveniences, wash basins and individual lockers for clothes and other personal articles. Where both sexes are employed, particularly where waiters and waitresses have to change into uniform, there should be separate changing rooms for each sex. Most people prefer to leave their outdoor clothes within sight of their work places. Clothes lockers are considered desirable unless the employees are satisfied that there is no risk of theft. A clothes locker with lattice-work sides and front, enabling wet outdoor clothes to be dried by normal ventilation, and a shelf for handbags, hats, shoes and other personal possessions are recommended.

3.6 King Edward's Hospital Fund (1965)

The 1965 King's Fund[15] report on non-resident staff changing accommodation outlines the various points associated with planning and sets out the results of surveys in three hospitals,which had received grants to install changing accommodation. Two methods of clothes storage were employed in these hospitals, open racks in a supervised store, and self-service storage with individual lockers.

Correspondence with several Regional Hospital Boards and Hospital Management Committees involved in the building of new hospitals or departments had revealed a lack of standardised procedures and policies concerning non-resident staff changing accommodation. Based on studies carried out at the three purpose-built non-resident changing blocks, of Hammersmith Hospital, St Stephen's Hospital, Chelsea and Wanstead Hospital, the various advantages and disadvantages of the open rack method and the self-service locker method were described.

3.7 Hospital Building Notes

The Ministry of Health have, between 1961 and 1967, issued a series of Building Notes, in which the main reference to staff changing accommodation

is in No. 18 (Administrative Department)[31]. While it is regarded as unnecessary to provide cloakrooms for office staff who can hang up coats in the office, it is recommended that, for men and women separately, the following categories of non-resident staff should be provided with changing accommodation.

A. Medical staff
B. Non-resident nursing staff
C. Non-resident domestic staff and porters

There is no common thread running through the Building Notes in relation to square footage to be allowed per person for changing or type or size of locker required. This leads to varied interpretation and to ambiguity which can only be resolved by greater detail. Where, for example, 8 square feet per person is allocated for changing, it should state whether this includes both changing and locker space or if any space for toilet facilities is also included. Examples of apparent inconsistency are illustrated in Building Notes Nos. 6, 8 and 9. Here, three different areas are allocated per person for the similar activity of changing from indoor clothing into overalls; 12 square feet, 15 square feet and 8 square feet respectively.

Building Notes are intended to provide general guidance. It is clear, however, that greater detail is required, and this would be welcomed by the service. A summary of relevant points from 25 Building Notes together with comments are given below:

3.7.1 **Building Note No. 4 (Ward Units)**

It is advocated that clothes lockers for non-resident staff should be provided centrally. At ward level, however, it is recommended that staff cloakrooms should be provided for nursing staff of both sexes, and may be shared by more than one ward unit; the cloakroom should be fitted with small lockers for personal possessions. No scale for the provision of w.c.s and washhand basins is given, nor measurements as to size and type of small personal lockers to be supplied or the area in square feet to be allocated per person using the accommodation.

3.7.2 **Building Note No. 5 (Short Stay Psychiatric Unit)**

This note is the same as Building Note No. 4 with the exception that no mention is made of personal lockers for ward staff.

3.7.3 **Building Note No. 6 (Diagnostic X-Ray Department)**

It is stated that staff cloakrooms with space for a *few* lockers should be provided for both male and female staff, bearing in mind that the female staff are usually in the majority; about 12 square feet floor area per person is recommended. However, in Equipment Note No. 6 it is stated that there should be *one* clothes locker for each member of staff. The Building Note also advocates a staff room for the technical staff and a guide to floor area requirements is 10 square feet per person, with a minimum size of 100 square feet. No guidance is given as to the size and type of locker required for technical staff, and it is not suggested that the radiography staff should use centralised non-resident changing accommodation.

3.7.4. **Building Note No. 8 (Physiotherapy Department)**

Recommends the provision of staff cloakrooms with separate changing accommodation for either sex. As the staff of the Physiotherapy Department change from indoor clothing into overalls or gym wear, about 15 square feet per person is recommended for changing.

Guidance is given as to the scale of provision for w.c.s and wash basins, namely that there should be one w.c. with separate wash basin for up to eight persons. No mention is made of clothes lockers being required or whether showers should be provided for physiotherapists, and it is not suggested that physiotherapists use centralised changing accommodation. In Equipment Note No. 8 however, it is recommended that there should be one clothes locker for each member of staff.

3.7.5 **Building Note No. 9 (Occupational Therapy Department)**

This note acknowledges the fact that the staff change from indoor clothing into overalls and this is said to require about 8 square feet per person. Separate changing accommodation is required for each sex. A staff common room of 10 square feet per person with a minimum area of

100 square feet is also recommended. No mention is made of size or type of clothes lockers required and the scale of provision for w.c.s and wash basins is not given. The provision of showers is not suggested nor the possibility that occupational therapy staff might use centralised changing accommodation. The Equipment Note No. 9 lists one clothes locker for each member of staff.

3.7.6 **Building Note No. 10 (Kitchen)**

This note suggests that changing rooms for kitchen staff should be planned close to staff entrances and that there should be separate accommodation for both sexes. Equipment Note No. 10 recommends that lockers should be provided for staff "as required". Sanitary accommodation is recommended on the ratio of one fitting to eight persons with wash basins planned en suite. Showers may be provided. The note also recommends a staff rest room of not less than 100 square feet. No detail is given on square footage for the size of changing rooms, nor on the size and type of lockers.

3.7.7 **Building Note No. 11 (Dining-Rooms)**

It is recommended that changing facilities for dining-room staff should be included when dining-rooms are planned with kitchens. Where the dining-room is situated some distance from the main hospital buildings, or if there are no such facilities in close proximity in the main building, cloakrooms will be required for dining-room staff. No detail is provided.

3.7.8 **Building Note No. 12 (Out-patient Department)**

No cloakrooms or changing rooms are mentioned. Sanitary facilities are noted in the following ratios: men, one w.c., one urinal and one wash basin for every 15 persons: women, one w.c. and one wash basin for every 12 persons.

3.7.9 **Building Note No. 13 (Central Sterile Supply Department)**

Staff lockers, w.c. and washing facilities should be exclusive to the C.S.S.D. but there is no mention of separation of sexes. A shower is said to be an advantage, 100 square feet is the recommended area irrespective of the number of staff using the changing area. No mention is made of the possibility of C.S.S.D. staff using centralised changing accommodation where showers would already be provided.

3.7.10 **Building Note No. 14 (Training School for Nurses)**

It is recognised that in some schools additional accommodation for coats and locker space may be required. The need for changing rooms, facilities for drying and lockers for clothing and the scale on which they should be provided will depend on the access from the school to the nurses' residential accommodation and main hospital, and the number of non-resident staff.

3.7.11 **Building Note No. 15 (Pathology Department)**

Changing rooms with lockers are required for male and female staff. Equipment Note No. 15 recommends one locker for each member of staff. Staff cloakrooms with w.c. and washing facilities should be provided. As staff should not eat or drink in any part of the laboratory, due to the risk of infection it is considered important to have a room for refreshments, which may also be used as a rest room. About 12 square feet per person is recommended. There is again a lack of guidance on the square footage to be allowed per person for staff changing rooms or the size or type of lockers required. No guidance is given on the scale of provision for w.c.s and wash basins, nor is it suggested that the staff changing rooms should be sited with the others in a centralised position.

3.7.12 **Building Note No. 16 (Boilerhouse and Steam Plant)**

Clothes lockers should be provided, the sanitary accommodation to comprise a w.c., a washhand basin and shower. The note also suggests that a messroom of 120-130 square feet should be provided in a position overlooking the firing floor of the boiler room: a bay with a sink, small cooker and storage space is needed. The note does not state the square footage to be allowed per person for changing. Neither is it suggested that the boiler-house staff should use the centralised changing block, where showers would already be available.

3.7.13 **Building Note No. 18 (Administrative Department)**

This is the main Building Note covering the question of staff changing accommodation and has already been referred to in an earlier section of the review of literature. One point not already covered is the design of the clothing locker. This note suggests that if lockers are constructed of wire mesh or grilles, rather than completely enclosed units, and if the heating of the changing area takes the form of heating coils or hot-air convectors then it should not be necessary to have special drying rooms. The note regards 8 square feet floor space per person as the minimum required. It further recommends that gangways between lockers should be at least 5′ 6″ when lockers with seats are provided, and 2′ 6″ between seat and locker when seats are placed between lockers. The note does not take into account the possibility of locker doors being open on both sides of the gangway at the same time thus reducing the free space from 5′ 6″ to 3′ 6″ with 12″ wide locker doors.

The Building Note also suggests that rest room facilities should be made available for female members of staff who are feeling unwell and wish to lie down. While in small hospitals one rest room may be enough, most hospitals have two, one near the domestic staff changing rooms, and the other near the non-resident nursing staff changing rooms. The room should contain one or more beds or couches, a chair and a wash basin. Also a common room should be provided for non-resident nursing staff who may be working split duties and consequently have two or three hours in which they need somewhere to sit: this room could also be used for those waiting for transport. The room should be furnished with comfortable chairs and tables and have facilities for making tea and coffee, for washing-up and storing crockery: it could be sited near the nurses' changing rooms. Alternatively, it could be grouped with the medical staff common room. The Building Note recommends the siting of the changing rooms for the various categories of staff: for the medical staff, near to the medical staff common room; for the nursing staff near the main entrance; and for the domestic staff and porters, near the domestic staff entrance.

3.7.14 **Building Note No. 19 (Department of Medical Photography and Medical Illustration)**

This Note merely states that a separate rest room of not less than 100 square feet should be provided, if it is not possible to use facilities of another department. No provision is made for the separation of the sexes or the square footage required per person, nor is mention made of the provision of full-length lockers for changing. It is not suggested that the staff might use centralised changing facilities.

3.7.15 **Building Note No. 20 (Mortuary and Post Mortem Room)**

There should be separate lockers for personal clothes and for post-mortem room gowns, aprons and boots for pathologists and occasionally for clinical staff. Further changing space or a second changing room will be needed in larger hospitals or hospitals where there are both male and female pathologists. It is recommended that one w.c., one wash basin and one shower cubicle are provided for the pathologist. Also for the attendant in the post-mortem room it is necessary to have a w.c. and wash basin together with a shower and clothes cupboard.

3.7.16 **Building Note No. 21 (Maternity Departments)**

For ward units a staff cloakroom with w.c. and washing facilities fitted with lockers for personal possessions and to be shared by more than one ward unit is advocated. Clothes lockers for non-resident staff should be provided centrally. No mention is made of the square footage or again the size or type of locker to be provided. It is recognised that the other departments, e.g., Labour Suite, Theatre, Special Baby Care Unit, etc., should each have their own sanitary facilities.

3.7.17 **Building Note No. 22 (Accident and Emergency Department)**

It is suggested that sanitary facilities for doctors and nurses can generally be sited adjacent to the theatre staff changing rooms, but it may be convenient to provide these facilities elsewhere. Small lockers for personal possessions should be planned with the w.c. and washing

facilities. The amount of sanitary accommodation recommended is as follows; males, one w.c., one urinal and one wash basin per 15 persons. There is no guide as to the square footage to be provided per person or size of small lockers for personal possessions. There is to be special changing accommodation consisting of two changing rooms to be provided for the theatres. No mention is made of using centralised changing accommodation.

3.7.18 **Building Note No. 23 (Children's Ward)**

Sanitary accommodation is required for both male and female members of staff and this should be planned to serve the whole ward floor. The recommended ratio is one w.c. and one washhand basin per 12 persons likely to be on duty at the same time. One w.c. and one wash basin should be adequate for male staff but greater provision will be required for female staff (nurses, domestic staff, orderlies, etc.). All non-resident staff should have cloakroom accommodation provided centrally, within the hospital but in addition there should be a small cloakroom on each ward floor where nurses can leave their cloaks, change their shoes and deposit any personal possessions in small lockers. This room should be planned at, or just inside, the entrance to a ward, unless it is centrally placed in a shared link area between wards. It should also have a communicating door to the female staff cloakroom. The Note does not specify separate cloakrooms for each sex.

3.7.19 **Building Note No. 25 (Laundry)**

The Note recommends that separate changing rooms for male and female staff with clothes lockers and lavatory accommodation (w.c.s and wash basins) should be provided near the staff entrance. The sanitary facilities for each sex to be provided on the following basis:

	Laundry Capacity (in articles weekly)		
Male			
1 w.c., 1 urinal, 1 wash basin	45,000,	60,000,	75,000
2 w.c.s, 1 urinal, 2 wash basins		90,000,	110,000
Female			
3 w.c.s, 3 wash basins		45,000,	60,000
4 w.c.s, 4 wash basins	75,000,		90,000
5 w.c.s, 5 wash basins			110,000

An incinerator to be provided with each group of female sanitary accommodation. The above proposed scale is in addition to the w.c. and wash basin to be provided in each barrier room. The Equipment Note No. 25 recommends that clothes lockers should be provided for each member of laundry staff.

3.7.20 **Building Note No. 31 (Psychiatric Ward Type One)**

Staff will require one w.c. and one washhand basin together with a room, fitted with lockers in which they may change their clothes: an area of 120 square feet is needed. In the case of wards with both male and female staff, two cloakrooms will be required, each of 100 square feet. No mention is made of square footage to be allocated per person, instead a blanket figure of 120 square feet is stated.

3.7.21 **Building Note No. 32 (Psychiatric Ward Type Two and Pre-Discharge and [Hostel Type] Ward)**

A changing room of at least 120 square feet will be required and individual secure lockers should be provided. A w.c. and washhand basin are needed. The overall figure of 120 square feet is given with no mention of square footage allocated per person. No provision is made for male and female staff cloakrooms. No mention is made of size and type of locker required.

4 CURRENT BOARD POLICIES

4.1 In reply to a postal enquiry by the Scottish Hospital Centre it was clear that opinion was divided on the two main methods of clothes storage, by means of a locker or a hanging basket. Some hospital authorities had decided that the conventional system of providing a full-length locker for each member of non-resident staff was uneconomical and that allocation of such lockers should be on a daily basis, e.g., they felt that if people were off for several days or on holiday, the large individual locker should be vacated. It

was also evident that the organisation of the changing facilities and the floor space provided per person varied from hospital to hospital. Extracts from comments by various Boards on their current policies on changing accommodation are relevant:

4.1.1 **Regional Hospital Board (For a new District General Hospital Extension)**

" Allow three square feet for each locker required and add five square feet per person based on an assessment of the maximum use at the busiest time. Separate provision is made for trained staff, students (S.R.N. and S.E.N.) and auxiliary staff. We consider that the provision for showers and toilets as contained in the Building Notes is excessive where accommodation for more than 200 staff is needed. We have considered the method used by Marks and Spencer of providing cages which are lockable for those hospital staff who only require to put on a protective overall."

4.1.2 **Regional Hospital Board (For a District General Hospital)**

" (a) *Female Nursing Staff*

(i) *Changing room(s).* Space is required for 620 lockers arranged in bays within an area of 4,960 sq. ft. Changing cubicles of 15 sq. ft. should be provided within this area for those nurses desiring additional privacy.

(b) *Male Nursing Staff*

(i) *Changing room.* It is considered that provision for 50 persons will be required and a room of 400 sq. ft. to accommodate 50 lockers should therefore be provided."

4.1.3 **Regional Hospital Board (For a District General Hospital)**

" Each changing room will provide individual full-length lockers for which each member of the staff will have their own key. A space for shoes and *another* for hats or baskets is included in each locker. In addition, there will be open racks fitted with coat hangers for hanging wet outer clothing. Bench seats are also provided. Each locker should be numbered and the index number kept with the key board in matron's office. The numbering should run consecutively through all changing rooms in order."

4.1.4 **Regional Hospital Board**

" The Board has, from previous experience, found that the average area per person has worked out at about 5.4 sq. ft., excluding toilet facilities and 7.0 sq. ft. per person including toilet facilities. This is approximately one square foot less than Building Note No. 18's recommendation. It might be worth noting that it is felt that if one provides separate changing facilities in addition to the locker area for the peak load requirements this tends to increase the average area per person. You may feel in some cases that private changing facilities are required for some of the more bashful staff, but if this were provided the tendency would be for all the staff to use them, resulting in an under provision for the peak load: and due to the use of the facilities by the staff generally the bashful person may be left changing in the general locker area."

4.1.5 **Hospital Management Committee**

" We hope that it will not be necessary to have a locker for every person (the large type for hanging dry and wet clothes and the inevitable shopping baskets). Allocation will be on a daily basis, e.g., we feel that if people are off for several days or on holiday, the larger locker should be vacated. We do hope to give everyone a permanent small lock-up. This method was employed as the Ministry of Health saw the original numbers as astronomical."

4.1.6 **Teaching Hospital**

" Here the planning team have decided to use a type of hanging basket with a lockable container."

5 LOCATION OF CHANGING ACCOMMODATION

5.1 Building Note No. 18 recommends the siting of the changing rooms for the various categories of staff as follows:

Medical staff, near to the medical staff common room;

Nursing staff, near to the main entrance;

Domestic staff and porters, near the domestic staff entrance.

In the other Building Notes concerned with paramedical staff no mention is made as to whether the non-resident staff should be sited centrally or where possible grouped together.

5.2 The only reference in detail to location is contained in the report published in 1965 by the Hospital Centre, King Edward's Hospital Fund[15]. It comments on the degree of centralisation as follows:

> " Decisions have to be made as to the extent to which the proposed accommodation should be centralised and the supplementary facilities to be provided at departmental level. Centralised accommodation near the main entrance or staff entrances offers the advantages of ease of engineering maintenance and cleaning organisation, adequate security and supervision and, if required, a convenient checkpoint for staff. This system can, however, be contra-indicated in the case of a very large site and scattered buildings. Departments such as laundry, engineering department, and kitchens which can be situated a considerable distance from the main entrance obviously require separate cloakrooms. According to logical circumstances, therefore, a certain degree of de-centralisation or possibly a combination of the two methods is the most efficient and economical way to plan this accommodation. The particular needs of night staff in wards situated farthest from central changing rooms may also require special consideration and the possible provision of facilities at ward level. Building schemes under consideration at present show a wide variety of plans for changing rooms for non-resident staff, from complete centralisation to complete de-centralisation, and combinations of both types. Much depends upon the general layout of the hospital but an important principle to bear in mind is the fact that every member of staff should have adequate cloakroom and changing facilities, within reasonable distance of his or her place of work."

5.3 In the Scottish Home and Health Department's Planning Note No. 1 on ward design, published by the Department in 1963[47], it is assumed that central changing accommodation will be available for non-resident staff and that ward cloakrooms will need to provide only for nurses' cloaks, etc. The provision of small individual lockers at ward level, for nurses to store such personal items as handbags is not discussed in this Note. Such lockers are being provided in some schemes, but differing views have been expressed on their value.

5.4 Information from Regional Hospital Boards and Hospital Management Committees revealed wide variations. Some Regional Hospital Boards have policies on the subject, others do not. The following are extracts from replies received to the question, " What is the policy of your Board as regards non-resident staff excluded from the planned changing accommodation, for example, administrative staff, works department staff etc. ?"

5.4.1. **Regional Hospital Board**

" Facilities are provided within their respective departments."

5.4.2 **Regional Hospital Board**

" The Board has not formally laid down a policy on who should or should not use central changing accommodation. I think we are slowly moving towards nearly everyone who does not have his own office using central changing accommodation. At present, grades of staff not catered for in central changing, change in their own departments, generally in a cloakroom where we put some lockers."

5.4.3 **Regional Hospital Board**

" Non-resident staff are provided with separate accommodation and changing facilities in the following departments and will use these instead of the staff central changing rooms—kitchens and dining-rooms, central sterile supply department, public health laboratory, isolation unit, maternity unit. Subsidiary time clocks have been allowed for at both the

kitchens and C.S.S.D. changing rooms. Provision has also been made for all resident and non-resident staff to hang their cloaks, coats, etc. in the cloakrooms in all Wards and Departments of the hospital where they work. In some instances, e.g., radiotherapy, physical medicine and X-ray etc., staff lockers for small personal effects have also been provided.

5.4.4 **Hospital Management Committee**

" The brief to the architect was as follows, there would be no changing at ward or department level. I had hoped that all staff would use the main changing room, and indeed this was in the original brief as the planning project team thought it would be easier for supervision, cleaning, allocation of clean coats as well as uniforms for all grades of staff. Unfortunately, some grades, e.g., physiotherapists, are already asking for separate changing facilities. This has not been taken care of in the original plans so that I can see the same picture as so often happens in hospitals—odd lockers will be purchased and appear in various corners, unless someone takes very strict disciplinary measures to make it completely centralised."

5.4.5 **Regional Hospital Board**

" All non-resident staff who need to change before commencing duty will use the central non-resident changing accommodation, except for those who need to make a second change during the course of duty or those who may need to take a shower during the course of duty.
Changing accommodation for staff will be provided within the following departments.

A Boiler House
B Kitchen
C Laundry
D Mortuary
E Operating Theatres
F Physical Medicine

5.5 It may be accepted that the situation remains the same as expressed by the King's Fund in their 1965[15] report, " Building schemes under consideration at present show a wide variety of plans for changing rooms for non-resident staff from complete centralisation to complete de-centralisation, and combination of both types."

6 STORAGE OF CLEAN AND DIRTY UNIFORM

6.1 In the King's Fund report of 1965[15] the problem of where to store clean and dirty uniform was said to be more acute in some hospitals than others. The system most commonly found was a method of storing both types in laundry boxes on tops of lockers; this method was considered unsatisfactory and the system of a separate linen room with individual drawers for uniform storage as used in Hammersmith Hospital was described as a more satisfactory solution.

6.2 The replies from the various Hospital Boards to an enquiry from the Scottish Hospital Centre in 1967 illustrated once again the wide variation in hospital policy. Ranging from an admission of " no policy " the most common method described was as in the 1965[15] report, that of storing clean and dirty uniform in laundry boxes on tops of lockers. Two Boards, in an effort to eliminate the old method of laundry boxes and the weekly returning to the laundry of soiled uniforms had already or were in the process of changing over to a system whereby uniforms would be allocated to individuals and exchanged on a daily basis. Extracts from Boards' replies illustrate trends of thought:

6.2.1 **A Regional Hospital Board**

" No fixed policy for nurses. Clean linen is supplied on an exchange basis where possible, i.e., where the size of the garment is not important."

6.2.2 **A Regional Hospital Board**

" Present policy as regards uniform changes, storage and laundry is as follows:

(a) *Nursing staff*
Nurses are issued with six dresses apiece (no aprons). Dirty dresses are collected once a week from the Central Laundry Bay and the

Nurses' Home and returned after being laundered on site at the Group Laundry. Clean uniforms are kept by the nurses in their lockers.

(b) *Domestic staff*
Domestics are issued with four overalls and two caps, two overalls and one cap are used each week. Dirty overalls are collected from the Central Laundry Bay once a week on Friday and taken to the Group Laundry; they are returned clean for the following Monday or Tuesday. Clean uniforms are kept by domestics in their lockers."

6.2.3 **For a District General Hospital**

" Two rooms will be provided in the area of non-resident changing accommodation, one for the reception and issue of clean uniforms and the other for dirty uniforms. It is intended that protective clothing issued to the ancillary staff will be issued on a " pool " basis. For instance, the porters will be issued with a pool of protective coats and once a week the dirty coats will be handed in to the dirty clothing room and an equivalent number will be issued from the clean room. In time of course, it will be known the various sizes required, and clean coats of the same size as those handed in could be made up into a bundle awaiting collection. The domestics, maintenance staff, etc., would be on a similar system. The professional and technical staff would have protective clothes issued to them on a personal basis and although say, all the coats of the technicians in the Path. lab. would be sent to the laundry in one bundle, each coat would be identifiable as to its owner and on return from the laundry in one package, the coats could be returned to their rightful owners. The social workers, medical records staff and others issued with personal coats would have them laundered in the same way. The bundles of dirty coats would be left at the dirty clothes room in the non-resident changing accommodation and the clean coats either collected from the clean room or would be taken to the departments by porters. The non-resident nurses would of course, be issued with a personal uniform and these would be laundered in individual lots. The box of dirty uniforms would be left at the dirty clothes room and the clean uniforms returned from the laundry could either be collected from the clean room or possibly placed in the nurse's locker in the non-resident changing accommodation if it is possible to allocate a locker to each non-resident nurse on a personal basis."

6.2.4 **A District General Hospital**

" Each member of the non-resident staff will have their own personal laundry box which will normally be kept on top of their own changing locker. Dirty articles of clothing will be put into polythene bags inside each box and on the appropriate collection day, each member of the staff will take their own box to a central collecting point in the basement of Ward Block A nearby before a notified time. From there, the boxes will be taken by a porter and loaded onto the Group Laundry van.
On return from the Group Laundry, the Central Linen room staff will sort the boxes according to the colour or code letter for each room—that is, ' A ', ' B ', ' C ', ' D ', or ' E '. Other codes will be given to the Kitchen, C.S.S.D., Isolation and Maternity Unit changing rooms. The porter will then deliver each group of boxes to the appropriate changing room, and staff will be left to take their own boxes."

6.2.5. **A District General Hospital**

" Uniforms will be allocated to individuals and exchanged on a daily basis to eliminate the old method of laundry boxes and weekly return to the laundry of soiled uniform. We hope to establish a daily collection of uniforms as well as other laundry from the hospital, and the items would be placed in paper bags. On return from the laundry, the person in charge of the cloakroom area would be responsible for sorting out the clean laundry alphabetically."

6.2.6 **A Teaching Hospital**

" It is proposed here to have uniforms exchanged on a one for one basis. The nursing staff will be issued with a clean, straight, button through dress each day. Dirty uniforms will be put into polythene bags which will be sited at the end of each row of hanging baskets."

7 SANITARY CONVENIENCES, WASHING FACILITIES, DRINKING WATER ETC.

7.1 Section 9 of the Offices, Shops and Railway Premises Act, 1963[44] requires that there shall be provided at places conveniently accessible to employees, suitable and sufficient sanitary conveniences for their use, and that these shall be kept clean and properly maintained, lighted and ventilated. The Sanitary Conveniences Regulations, 1964, S.I. 966 became operative from the 1st January, 1966. By section 10 of the same Act there must also be available sufficient washing facilities, including a supply of clean, running hot and cold or warm water, soap and clean towels or other suitable means for cleaning or drying. (See also the Washing Facilities Regulations 1964, S.I. 1965, which became operative as from 1st January, 1966.) The occupier of premises must also provide and maintain an adequate supply of wholesome drinking water which, if delivered otherwise than in a jet, must be accompanied by a supply of drinking vessels.

7.2 In 1966 the Industrial Society published a comprehensive work of reference for those responsible for the management and maintenance of work places called "Lavatories and washrooms in factories and offices"[21]. Besides summarising the industrial legislation of working conditions there is also detailed guidance on lighting, heating and ventilation as well as sections with hygiene and maintenance of sanitary and ancillary equipment. Some useful advice on the wide variety of surfaces available for walls and floors is also included. There is a chapter on good general practice as represented by the British Standard Code of Practice and the Industrial Society's own recommendations are given as an extension of present standards to fit the probable requirements of the next 20 years.

7.3 Hospital Building Note No. 18[31] recommends that there should be one w.c., one urinal and one wash basin for every 15 men; there should be one w.c. and one wash basin for every 12 women and an incinerator should be provided. It further recommends that one shower be provided for every 15 nurses, domestic staff and porters.

7.4 The publication earlier referred to called "Amenities standards in Imperial Chemical Industries Ltd."[20], upgraded their provision of toilets in 1957 to: "one w.c. and one urinal to 15 males, with no reduction as the numbers increased. One w.c. to 10 females, with no reduction rate as the number increased." On hand and face washing facilities it notes:

> "The report of the Amenity Committee in 1946 recommends one washing arrangement for every 15 persons up to 105 persons, and thereafter one for every 20 persons. Experience has shown that these numbers are inadequate and it is recommended that the normal provision shall be between one to every 10 people and one to every five people. Certain factors may require provision of washing arrangements. It is pointed out that the Chemical Works Regulations, 1922 require that the provision of washing arrangements at a rate of not less than 25 people, for certain processes."

8 CURRENT PLANNING POLICIES

8.1 Schedules of accommodation of five proposed district general hospitals in Scotland* were examined in detail with particular reference to:

1. Provision of changing accommodation.
2. Type of clothes storage selected.
3. Operational policy with regard to:
   - (a) the entire accommodation.
   - (b) security.
   - (c) supervision.
   - (d) wet clothing.
   - (e) supply and disposal of uniform and protective clothing.
4. Staff estimates:
   - (a) number of non-resident staff.
   - (b) number of part-time staff and relationship to whole-time staff.
   - (c) grades of hospital staff.

* See Appendix B.

5 Overall floor area allocated:
   (a) per person.
   (b) per grade.

6 Provision of sanitary facilities and whether these were included as part of the overall square footage allowed per person or if these were taken on an entirely separate basis.

7 The degree of centralisation and de-centralisation.

8 Rest rooms and common rooms.

8.2 The results were:

1 **Provision of changing accommodation**

Changing accommodation was scheduled in each of the five district general hospitals.

2 **Type of clothes storage selected**

A locker system of clothes storage allocated on an individual basis was selected by all five hospitals, however no specification of locker size was given apart from the general description of small full-length wire mesh lockers.

3 **Operational Policy with regard to:**

(a) *The accommodation as a whole*
There was no specific policy on the management of the non-resident staff changing accommodation set out in any of the five schedules of accommodation.

(b) *Security*
This was provided in all cases by individual lockers with separate padlocks and keys.

(c) *Supervision*
In only one schedule was there mention of accommodation for a changing-room attendant: in another, accommodation for a supervisor was left as a matter for consideration.

(d) *Wet clothing*
No specific areas were allocated for drying wet clothing and articles such as umbrellas. The drying facilities provided in each of the schemes was by passing hot air through the wire mesh lockers.

(e) *Supply and disposal of uniforms and protective clothing*
There was no policy in any of the briefs on the supply and disposal of uniforms and protective clothing.

4 **Staff Estimates**

(a) *Number of non-resident staff*
It was not possible to obtain the total number of non-resident staff from every schedule. In the case of nursing staff, when the total nursing staff complement and the number of resident staff were shown, it was possible to estimate the number of non-resident nursing staff; this number, however, did not always compare with the estimated number of lockers to be provided.

(b) *Number of part-time staff*
There were no separate estimates given in the briefs for the number of part-time staff to be employed.

(c) *Grades of hospital staff*
Each schedule provided accommodation divided into rooms or sections according to the grade and the sex of staff, they differed however on the classification of the various categories of staff. These were as follows:
   (1) Medical, male and female.
   (2) Medical male.
   (3) Medical female, and sisters female.
   (4) Nurses.
   (5) Nurses, professional and technical, male and female.
   (6) Other staff, male and female.

(7) Medical administrators and clerical staff.
(8) Domestic, male and female (this included portering, catering and maintenance staff).

5 **Overall Floor Area Allocated** (excluding sanitary facilities)

(a) *Per person*
The average square footage allocated per person for all grades varied from 5-8 sq. ft.

(b) *Per grade*
Within the individual grades of staff the average area varied between 4.2 and 9 sq. ft. per person.

6 **Provision of Sanitary Facilities**

Sanitary facilities and showers were provided in all schedules. The area which these facilities took up was not included as part of the estimated area for changing accommodation. The average square footage for the sanitary facilities and changing area for all staff varied from 6.2-9.0 sq. ft. per person.

7 **Degree of Centralisation and De-Centralisation**

Each schedule set out to provide central changing accommodation divided into sections according to grade and sex of staff. However, a degree of de-centralisation did occur. Some hospitals provided separate changing accommodation for the following grades of staff, kitchen, pathology, laboratory technicians and service departments (engineers, maintenance workers and gardeners). Allocated to staff in these grades were individual lockers with associated toilet facilities and in some instances, common rooms. In these areas a higher than average space had been allocated per person than was to be provided for in the central changing accommodation.

8 **Provision of Rest Rooms and Common Rooms**

Four schedules provided separate common rooms for the nursing and the domestic grades of staff, within the centralised non-residential staff changing area.

Only one of these four schedules provided both a common room and rest room for female nursing staff with the proviso that this rest room be shared with the female clerical staff.

Additional staff common rooms are however provided in all of the schedules on a de-centralised basis for the medical and paramedical grades of hospital staff, e.g. laboratory, physiotherapy and radiological staff.

9 COMMENT

9.1 One conclusion from the review of literature is that staff accommodation requirements have taken a low priority with regard to definition and space allocations. Because of their apparent lack of importance they have become in the past a Cinderella in hospital planning. Another point is that especially in the last seven or eight years, there has been a continuing and increasing need for this type of accommodation due to the steady increase in part-time and full-time non-resident staff. In light of these facts it would seem prudent that hospital authorities should give more priority to the provision or improvement of cloakrooms, changing and other accommodation for all grades of staff wherever this is required.

9.2 The review of schedules of accommodation for five proposed district general hospitals demonstrates the need for more precise guidance to planning groups. The accommodation and areas provided for non-resident staff changing were generally based on Building Note 18. Each schedule used the figure of 8 sq. ft. per person with the overall area dependent on the number of staff involved. The allocation of 8 sq. ft., however, did not apply to every grade. In some schedules peak loads of staff had been used to estimate the size of the changing area. This peak load was taken as being roughly one-half to two-thirds of the total estimated number of lockers, and the 8 sq. ft. was multiplied by this number, to give what was termed the peak use of accommodation and therefore the area of the accommodation to be provided. In none of the schedules was it thought necessary to provide separate changing cubicles to ensure added privacy for staff changing, nor was it suggested that

lockers be placed in groups or bays to provide a degree of privacy while changing.

9.3 The main users of changing accommodation in the future will continue to be the nursing, domestic and portering staff but the needs of the growing numbers of paramedical staff will also have to be taken into account. The system of providing space for a locker per person is costly because of the large area required when the proportion of non-resident staff is high. The alternative consideration of supervised open storage of clothes would seem to give more flexible use of accommodation which could be adapted more easily to future changes in staffing patterns. A supervised system has in principle much to commend it, but a preference for an individual locker system persists.

Part Two: DATA

10 NUMERICAL TRENDS IN NON-RESIDENT STAFF

10.1 In recent years it has been accepted that a greater number of staff is required for the hospital service and that more non-resident and part-time staff should be employed. The rate of increase of individual categories of staff and the extent to which each of these contributes to the total number of non-resident staff is relevant to this study.

10.2 A review of statistics† of full-time and part-time staff employed in Scottish Hospitals in 1960 and in 1966 was undertaken by the study team. Estimates of non-resident staff were obtained by adding the full-time and part-time staff employed, and subtracting the number of resident staff. Effective staff estimates,* in which part-time staff are recorded in the statistics as the equivalent of full-time staff, were not used as they did not indicate the overall number of people employed nor consequently the number of staff for whom changing facilities would be required.

10.3 Ten main categories of hospital staff are listed in the statistical returns.† The individual grades comprising each category are given in detail at page 00. The statistical tables showed that by far the greatest proportion of hospital staff are non-resident, and that there has been a significant increase in all categories, although the rates of increase varied within grades between 1960 to 1966.

10.4 It was not possible to achieve complete accuracy in the comparison of all grades of non-resident hospital staff as some of these were re-classified during the six-year period. The pattern demonstrated by the main categories is outlined and discussed in the following paragraphs in association with the relevant statistical tables. While it is realised that the data from this survey cannot be used in detail in projecting staff estimates, it is hoped that they may act as an overall guide.

* Effective staff estimates are at present based on the calculation of the total number of hours worked by part-time staff, divided by the conditioned hours for the grade to give the whole-time equivalent. Formerly the total number of hours worked by part-time staff was divided by two to give the whole-time equivalent.

† Stats./H.S.8 (Revised 1.4.65).

TABLE I: TOTAL RESIDENT AND NON-RESIDENT HOSPITAL STAFF IN 1960 AND 1966

Year	Total† Hospital Staff	Resident Staff	Total Non-Resident Staff
1960	59,357	11,907	47,450
1966	70,894	9,266	61,628
Increase 1960-1966	11,537		14,178
Decrease 1960-1966		2,641	

† Whole-time staff plus part-time staff.

[Figures for tables I-VII have been extracted from Stats/H.S.8 for Scotland]

This table indicates that:

Non-resident staff made up 80% of all hospital staff employed in 1960 and this had increased to 87% in 1966.

The overall increase in non-resident staff from 1960 to 1966 was 30%.

TABLE II: THE INCREASE AND DECREASE IN NON-RESIDENT HOSPITAL STAFF BETWEEN 1960 AND 1966

	1960		1966		Differences in Non-Resident Staff	
	Total Staff	Non-Resident Staff†	Total Staff	Non-Resident Staff	1960-1966 Increase	1960-1966 Decrease
Medical and Dental‡	1,670	1,006	1,723	1,176	170	
Nursing Staff	19,270	11,931	23,950	18,086	6,155	
Midwifery Nursing Staff	2,830	1,462	3,921	2,685	1,223	
Mental Nursing Staff	6,781	6,059	8,115	7,461	1,402	
Medical Auxiliary	2,561	2,470	3,565	3,493	1,023	
Dispensary	341	329	395	388	59	
Hospital Operatives* Special Grades*	897	846	473	436		410
Domestic and Ancillary*	18,289	16,726	21,964	21,162	4,436	
Craftsmen and Tradesmen*	4,353	4,274	3,535	3,504		770
Clerical	1,881	1,867	2,671	2,660	793	
All other	484	480	582	577	97	
Totals	59,357	47,450	70,894	61,628	15,358	1,180

* These categories were reclassified between 1960 and 1966.
† Non-resident staff, i.e., whole-time plus part-time, less resident staff.
‡ Excluding consultant staff.

This table indicates that:

An increase in non-resident staff is shown in all grades, apart from those reclassified during this period.

The nursing category and the domestic and ancillary category show the largest increase of 8,780 and 4,436 respectively.

The nursing category shows the highest rate of increase, 45% followed closely by clerical and medical auxiliary categories at 43% and 41% respectively.

The nursing category alone accounts for over 50% of the total non-resident staff increase.

TABLE III: THE COMPARISON BY CATEGORY OF NON-RESIDENT HOSPITAL STAFF IN 1960 AND 1966

Category	Percentage	
	1960	1966
Medical and Dental	2.1	1.9
Nursing Staff	40.9	45.8
Medical Auxiliary	5.2	5.7
Dispensary	0.7	0.7
Hospital Operatives*	1.9	0.2
Special Grades*		0.4
Domestic and Ancillary*	35.3	34.3
Craftsmen and Tradesmen*	9.0	5.7
Clerical	3.9	4.4
All other	1.0	0.9

* These categories were reclassified between 1960 and 1966.

This table indicates that:

The nursing category formed the highest percentage of the total number of non-resident hospital staff: 41% in 1960 and 46% in 1966.

The domestic and ancillary category formed 35% and 34% of all non-resident staff in the same period.

The remaining categories made up the total number of non-resident staff at 24% and 20% respectively.

TABLE IV: THE PERCENTAGE RATE OF INCREASE OR DECREASE OF ALL NON-RESIDENT HOSPITAL STAFF BETWEEN 1960 AND 1966

Category	%
Medical and Dental	+16
Nursing Staff	+46
Medical Auxiliary	+41
Dispensary	+18
Hospital Operatives* Special Grades*	−46
Domestic and Ancillary*	+26
Craftsmen and Tradesmen*	−18
Clerical	+42
All Other	+20

* These categories were reclassified between 1960 and 1966.

This table indicates that:

The percentage rate of increase varied considerably by category between 1960 and 1966.

TABLE V: DIFFERENCES IN PART-TIME STAFF BETWEEN 1960 AND 1966

Category	1960	1966	Differences	
Medical and Dental	686	808	+122	+18%
Nursing Staff	5,647	9,454	+3,807	+67%
Medical Auxiliary	229	409	+180	+79%
Dispensary	19	32	+13	+68%
Hospital Operative*	80	NONE	−80	−90%
Special Grades*	NONE	8	+8	
Domestic and Ancillary*	5,315	6,978	+1,663	+31%
Craftsmen and Tradesmen*	291	232	−59	−20%
Clerical	90	243	+153	+170%
All Other	359	425	+66	+18%
Total	12,716	18,589	+5,873	+46%

* These categories were reclassified between 1960 and 1966.

This table indicates that:

All part-time staff increased by 5,873, an increase of 46%.

Part-time staff form 41% of the overall increase in non-resident staff. Increases are shown in all categories of staff apart from those reclassified during this period.

The nursing category formed the greatest numerical increase of 5,697 in 1960 to 9,454 in 1966.

The nursing category formed 65% of the total part-time staff increase.

TABLE VI: THE INCREASE IN WHOLE-TIME AND PART-TIME NON-RESIDENT NURSING STAFF BETWEEN 1960 AND 1966

Category	Whole-time non-resident nursing staff				Part-time nursing staff			
	1960	1966	Increase		1960	1966	Increase	
General	7,509	10,701	3,192	42%	4,422	7,385	2,963	64%
Midwifery	1,149	1,757	608	52%	313	928	615	196%
Mental	5,147	6,320	1,173	22%	912	1,141	229	25%
Total	13,805	18,778	4,973	36%	5,647	9,454	3,807	67%

This table indicates that:

There was an overall increase in all non-resident staff of 45% from 1960 to 1966.

TABLE VII: RESIDENT AND NON-RESIDENT NURSING STAFF IN 1960 AND 1966

Category	1960		1966	
	Resident	Non-Resident	Resident	Non-Resident
General	7,339	11,931	5,864	18,086
Midwifery	1,368	1,462	1,236	2,685
Mental	722	6,059	654	7,461
Total	9,429	19,452	7,754	28,232

This table indicates that:

There was a decrease in resident nursing staff of 1,675 from 1960 to 1966.

There was an increase in non-resident nursing staff of 8,780 from 1960 to 1966.

The proportion of resident nursing staff to non-resident nursing staff in 1960 was 1 : 2 and in 1966 1 : 4.

11 TREND IN NON-RESIDENT NURSING STAFF

11.1 As nursing staff formed 46% of the total number of all non-resident hospital staff, a more detailed analysis was made of this grade, in an attempt to identify the trend and to establish if the pattern was similar in all hospitals, irrespective of type and geographical location.

11.2 The statistical returns from 35 Scottish hospitals during the years 1960 to 1966, were examined in detail. Non-resident nursing staff were taken as the percentage of the total nursing staff employed in each hospital, and the comparison between hospitals of similar type in each of the five regions was based on this estimate. " Effective " nursing staff estimates were not used.

11.3 The hospitals were classified into the following broad types:

Teaching hospitals.

District general hospitals.

Maternity hospitals.

Psychiatric hospitals.

Other hospitals (paediatric, mentally defective, small acute general hospitals and cottage hospitals).

11.4 A summary of the main findings is given below and the graphs and statistical tables compiled during the survey are set out at pages 00-00.

11.5 Approximately 90% of all hospitals in the survey, irrespective of type and geographical location showed an increase in non-resident nursing staff during the six-year period from 1960 to 1966. In 1960, one-third of the hospitals had less than 50% of their nursing staff non-resident, and yet by 1966, all hospitals had over 50% non-resident, and over half of these had at least 70% of their nursing staff non-resident. The rate and level of the increase varied in individual hospitals, although hospitals of similar type, with some exceptions, tended to follow the same pattern in all of the regions.

11.5.1 *The teaching hospitals* situated mainly in dense population areas of major towns and cities, showed the most marked increases. The majority indicated an overall increase of some 20% since 1960. The rate of increase was more stable and more gradual in 1965 and 1966, but there is no indication that the number of non-resident staff is " levelling off ".

11.5.2 *The district general hospitals* did not show as sharp and as rapid a rate of increase as the teaching hospitals, apart from those situated in major cities. Over 60% of their staff were non-resident in 1960 and the overall average increase by 1966 was 6%.

11.5.3 *The maternity hospitals* with one exception, indicated increases comparable both in pattern and rate of increase to those of the teaching hospitals. The overall increase throughout the five Scottish regions was 23%.

11.5.4 *The psychiatric hospitals* followed the same trend and pattern in each of the regions. The overall average increase by 1966 was 2% but the percentage of non-resident nursing staff employed in 1960 was without exception over 80% and in some cases almost 100%. These hospitals have always had to depend on a high level of non-resident staff, and it is reasonable to assume that the pattern will not change.

11.5.5 *Other hospitals* followed the hospital types with which they were most closely identified; the paediatric hospital followed the pattern of the teaching hospitals; the mentally defective that of the psychiatric hospitals, and the small acute general hospital and the cottage hospital that of the district general hospitals.

TABLE A: PERCENTAGE NON-RESIDENT NURSING STAFF TO TOTAL NURSING STAFF EMPLOYED BY HOSPITAL AND REGION—1960-1966

Nine Teaching Hospitals

Year	Western Region			South-Eastern Region		Eastern Region		North-Eastern Region		Average
1960	29	37	23	28	63	68	78	41	40	45
1961	34	47	59	40	57	61	82	52	45	53
1962	39	57	61	45	55	67	79	51	49	56
1963	36	47	67	54	60	65	81	55	58	57
1964	42	52	65	55	62	78	87	48	60	61
1965	43	59	67	60	62	78	83	69	61	65
1966	54	56	66	61	62	78	84	64	66	66

Eight District General Hospitals

Year	Western Region		South-Eastern Region		Eastern Region		Northern Region		Average
1960	52	91	—	69	54	61	22	36	55
1961	68	89	74	61	46	62	25	36	58
1962	66	85	75	58	57	65	44	37	61
1963	73	84	72	61	60	69	48	41	63
1964	69	86	74	65	61	73	51	45	65
1965	66	88	75	60	61	76	49	55	66
1966	70	87	71	65	65	70	58	49	67

Five Maternity Hospitals

Year	Western Region	South-Eastern Region	Eastern Region	North-Eastern Region	Northern Region	Average
1960	37	35	48	66	32	44
1961	42	46	52	70	43	51
1962	42	44	68	65	45	53
1963	48	53	68	62	42	55
1964	52	58	74	69	62	63
1965	49	64	71	76	58	64
1966	54	60	83	67	62	65

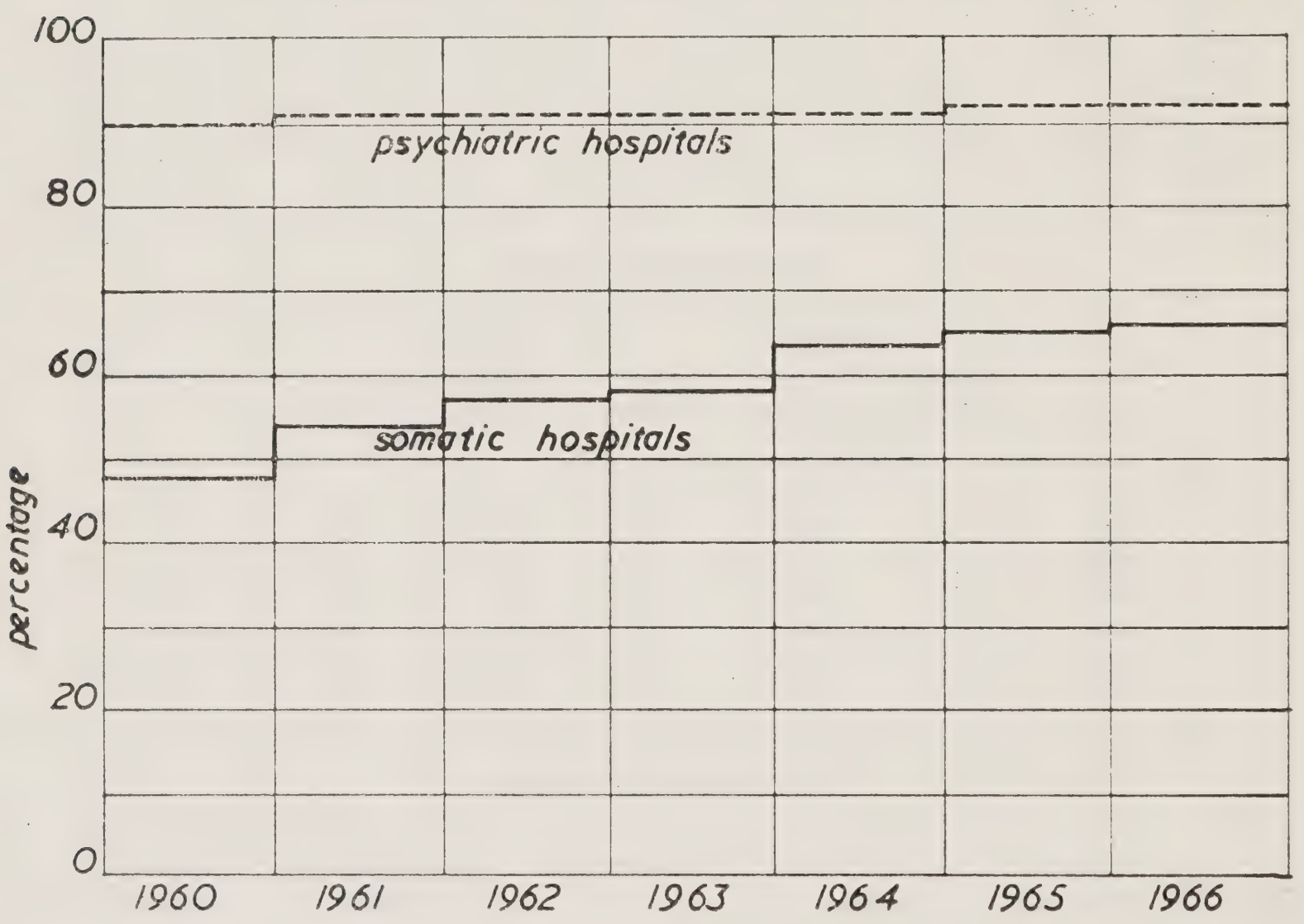
Nine Psychiatric Hospitals

Year	Western Region		South-Eastern Region		Eastern Region		North-Eastern Region		Northern Region	Average
1960	81	90	86	80	91	95	99	98	87	90
1961	81	93	84	85	94	94	98	99	88	91
1962	84	93	83	88	93	93	99	99	89	91
1963	88	89	83	86	92	84	99	99	85	91
1964	89	92	83	84	95	92	100	99	89	91
1965	84	92	88	87	95	93	100	99	88	92
1966	89	93	87	88	95	93	100	99	88	92

TABLE B: THE DISTRIBUTION OF THE PERCENTAGE OF NON-RESIDENT NURSING STAFF TO TOTAL NURSING STAFF EMPLOYED IN 35 HOSPITALS DURING THE YEARS 1960-1966

	% 0-10	% 10-20	% 20-30	% 30-40	% 40-50	% 50-60	% 60-70	% 70-80	% 80-90	% 90-100
1960		1	3	6	2	2	7	1	5	8
1961		1	1	2	7	3	5	1	8	7
1962			1	2	6	5	5	1	8	7
1963			1	1	5	5	6	2	9	6
1964			1		3	5	7	4	8	7
1965				1	3	3	8	5	8	7
1966						6	10	3	9	7

TABLE C: NON-RESIDENT NURSING STAFF SHOWN AS A PERCENTAGE OF TOTAL NURSING STAFF EMPLOYED IN 35 HOSPITALS



12 HOSPITAL STAFF

12.1 The main categories of hospital staff as listed in the Scottish statistical returns H.S.8 (Revised 1.4.65) are as follows:

Medical and Dental (excluding clinical consultant staff).
Nursing staff, Midwifery staff and Mental Nursing Staff.
Domestic and Ancillary staff.
Dispensary.
Medical Auxiliaries.
Hospital Operative staff.
Clerical staff employed in clinical and allied departments.
Special grades.
Craftsmen and Tradesmen.
All other staff not included in the above list.
Details of the individual grades within these categories are listed below.

Medical and Dental

General Practitioners
Junior Hospital Medical Officers
Senior House Officers
House Officers
General Dental Surgeons

Nursing Staff

Above Ward Sister/Charge Nurse
Ward Sisters/Charge Nurses
Staff Nurses
Senior Enrolled Nurses
Enrolled Nurses
Student Nurses
Pupil Nurses
Nursery Nurses
Nursing Auxiliaries

Midwifery Staff

Above Midwifery Sister
Midwifery Sisters
Staff Midwives
Staff Nurses (not S.C.M.)
Senior Enrolled Nurses
Enrolled Nurses
Pupil Midwives, Part I
Pupil Midwives, Part II
Nursery Nurses
Nursing Auxiliaries

Mental Nursing Staff

Above Ward Sister/Charge Nurse
Ward Sisters/Charge Nurses
Deputy Ward Sisters/Charge Nurses and Staff Nurses
Enrolled Nurses
Student Mental Nurses
Pupil Nurses
Nursing Assistants

Domestic and Ancillary Staff

Kitchen Staff
Dining Room Staff
Laundry Staff
Ward Orderlies
Maids
Cleaners and Other Female Domestics
Stokers (excluding high-pressure boilers)
Liftmen
Porters
Storekeepers and Storemen
Telephonists
Drivers

Garden Labourers
Farm Workers
Others

Dispensary

Pharmacists
Assistants in Dispensing
Other Staff

Medical Auxiliaries

Almoners
Biochemists
Chiropodists
Electro-encephalographers
Occupational Therapists
Opticians (Ophthalmic and/or Dispensing)
Orthoptists
Photographers (Medical)
Physicists
Physiotherapists
Psychiatric Social Workers
Psychologists
Radiographers
Remedial Gymnasts
Speech Therapists
Therapeutic Dietitian
Dental Attendants
Technicians (including Student Technicians)
Technicians Dark Room
Technicians Dental
Technicians Hearing Aid (and Audiometricians)
Technicians Medical Laboratory
Technicians in Physics Department (radiotherapy, etc.)
Technicians Cardiological
Technicians Other

Hospital Operative Staff

Building Supervisors
Engineers in Charge
Assistant Engineers

Clerical Staff employed in Clinical and Allied Departments

Senior Administrative
General Administrative
Junior Administrative
Higher Clerical
Clerical
Shorthand Typist, Copy Typist and Supervisor
Machine Operator and Supervisor
Personal Secretaries

Special Grades

Catering Officers
Assistant Catering Officers
Domestic Superintendents
Assistant Domestic Superintendents
Storekeeper/Clerks
Laundry Managers
Assistant Laundry Managers
Farm Managers
Home Wardens
Assistant Home Wardens

Craftsmen and Tradesmen

Cabinetmakers and Upholsterers
Sewing Maids, Tailors, etc.
Gardeners
Stokers (high-pressure boilers)
Building Craftsmen and Labourers

Engineering Craftsmen
Semi-skilled Engineers
Orthopaedic Workshop Staff
Others

All other Staff not included above

e.g., Chaplains
Librarians
Organists

13 REPORT OF A STUDY OF NON-RESIDENT STAFF CHANGING ACCOMMODATION

A team from the Scottish Hospital Centre carried out a survey in a hospital where individual lockers were arranged in enclosed bays, and additional changing cubicles were provided.

The aim of the survey was to obtain further information for the planning of non-resident staff changing accommodation and in particular to review the following points:

1 The total number of staff using the accommodation.
2 The total number of lockers used.
3 The peak period of use.
4 The peak number of staff in the locker bays at any one time.
5 The extent of demand for changing cubicles, showers and toilet facilities.

The survey was carried out when a representative sample of female nurses was using the accommodation, from 4 p.m.-10.30 p.m. on one day and 7 a.m.-4 p.m. on the next. This covered the time during which the accommodation was open in a 24-hour period.

The team is grateful to the Matron, the Group Secretary and members of the hospital staff for their help and co-operation in this study.

13.1 General Description of the Changing Accommodation

The hospital is a mainly acute general hospital of 612 beds, with pavilion type wards, connected by covered ways and stretching over approximately 30 acres. The hospital was originally planned for patients with infectious diseases.

The changing block, providing changing accommodation for 496 non-resident male and female nursing, domestic, catering and portering staff, was opened in October 1964 at a cost of £60,500 for the building and its equipment. Separate changing accommodation for catering staff will be provided when new kitchens are completed. The changing block is situated near the main entrance to the hospital in the position most central to the widely scattered wards, and is surrounded by lawns and flower beds. Access to the wards is across an internal hospital road to a covered way. The land adjoining the block is available for future expansion in Phase II of the hospital's development programme.

A diagram of the changing accommodation (p. 43) is given at the end of this section.

Two entrances lead to the main entrance hall and main corridor. These are intended for staff arriving at and leaving the hospital, and for movement between the changing unit and the wards. This area contains the time-clock and cards, pigeon-hole letter rack, two acoustic telephone booths for outgoing calls only, an occasional table and chairs and two notice boards—one for nursing and one for ancillary staff. The time-clock is used by part-time nursing staff and all ancillary staff. Vinyl floor tiles are laid throughout the building.

The supervisor's office, off the central hall, is situated in a central position. This office (approximately 200 sq. ft.) has a large service counter, with a glass sliding panel above, overlooking the main corridor. There is one telephone connected to the PABX and thus to all departments in the hospital. The supervisor can be connected to an outside line through the switchboard.

The clean and dirty uniform stores are placed on either side of this office. There is separate access to each from outside the building and they can be entered from the inside only through the supervisor's office. This separates the delivery of clean uniforms from the removal of the dirty, and provides security for the items stored. The clean uniform store (approximately 300

sq. ft.) acts as a reception, checking and sorting point for the uniform bundles prior to their being placed in the staff lockers, by the changing block staff. The store also provides storage for cleaning materials. The dirty uniform store (approximately 160 sq. ft.) communicates with the main corridor by three push-through hatches: soiled uniforms are dropped into uniform bags lining the wicker hampers underneath these hatches. The laundry is processed weekly.

A domestic service room (75 sq. ft.) which is directly opposite the supervisor's office, has a sink, draining board and storage space for cleaning equipment. The staff changing and clothes storage accommodation is divided into two major sections according to grade and then sub-divided by sex:

Section I { Female nursing staff / Male nursing staff

Section II { Female ancillary staff / Male ancillary staff

These areas open off the main corridor.

Section I: Female Nursing Staff

All grades of female nursing staff change here, sisters, staff nurses, state enrolled nurses, student nurses, pupil nurses and nursing auxiliaries, both full and part-time staff.

Each member of staff is provided with an individual locker; this applies to both full-time and part-time staff, and lockers are retained during periods of absence, due to leave or sickness. The lockers are grouped in bays, 16 in each bay. The enclosed bays are formed by placing lockers (interlocking L-shaped) back to back. The gaps top and bottom are sealed off. Seventeen locker bays are arranged round the outside walls of two parallel corridors which are joined at one end with one extended leg, ten bays in corridor A and seven bays in corridor B (see p. 43). Each corridor (4′ 2″ wide) has a separate entrance, and it was noted that while doors had been provided, they were wedged open. Fire escape doors (push-bar type) are situated at either end of these corridors.

The central core of this section provides changing cubicles, sanitary facilities and showers, each side serving the appropriate corridor. The provision per corridor is as follows:

Section I (Female nursing staff)	Locker Bays	Changing Cubicles	Showers	W.C.s	Incinerators
Corridor A	10	13	2	3	2
Corridor B	7	9	2	3	1

Locker Bays

The locker bays are identical in shape and size. Opposite the sliding door, which is easily controlled, is the window and a 5′ long 13″ wide bench seat placed at a height of 17″. A bright cotton curtain covers the window because the obscure glass at ground level does not provide adequate privacy. There is a full-length mirror, washhand basin with small mirror above, wall mounted paper towel dispenser and a waste-paper basket. As originally planned lockers are placed on either side of the bay, making seven on one wall and nine on the other. The spacing between these lockers is 7 ft. and the overall free floor area is 66 sq. ft. However due to an increase in the number of non-resident staff, and of the part-time component of this category, the original estimate of 272 lockers for female nursing staff has proved to be inadequate; this has necessitated the placing of 39 extra lockers within the locker bays and the link corridor. These lockers are free standing and of various shapes and sizes, each thus reducing the available free space within the locker bay to approximately 60 sq. ft. and also reducing the spacing between the lockers to less than that recommended by the Ministry of Health (5′ 6″ spacing between lockers and 2′ 6″ spacing between a central bench seat and a locker). There is no convenient laying surface for nurses to use while changing into and out of uniform. The only flat surface in the locker bay is the wooden seat along the

window wall. In most cases this was too far away and, although a hook was provided inside the locker door, clothes and uniform were placed on the floor. Two of the locker bays are reserved for sisters, these have no additional lockers.

Lockers

The lockers (12″×21″×72″) are ' L ' shaped and interlock having a hanging space of 6″×21″ and storage space of 6″×10½″ with one open shelf. The amount of clothing which can be accommodated in a depth of 6″ is limited. The shelf is 12″ from the top and holds the normal clean uniform bundle. The door opens to a height of 16″ from the bottom of the locker thus forming a well for shoes, bags, etc. There is one hook on the back of the door and a double hook inside. Louvres are provided top and bottom, and a positive fan-induced warmed-air system of ventilation has been installed. Lockers are raised 6″ off the floor allowing a toe space for ease of cleaning underneath. Yale locks, with a master system of key identification, are used. The main problem in relation to keys is their loss and necessary replacement; in one year this amounted to some 500 keys.

Showers

These are divided into:

1 Dry compartment: 4′ 3″×4′ 3″, with a double clothes hook behind the door and a 4′-long bench seat 13″ in width and 17″ in height.

2 Wet compartment: 4′ 3″×4′ 3″, this is tiled from floor to ceiling and the trough is 6″ lower than the level of the dry compartment. The shower nozzle is on a flexible coupling, which may be fixed or hand operated.

Incinerator compartment

4′ 2″×2′ 8″. There is a wall-mounted incinerator and a sanitary towel dispenser.

W.C.s

4′ 3″×4′ 2″. These are small but adequate and include a washhand basin, a wall-mounted paper towel dispenser, and waste-paper basket. Tablet soap is provided.

Changing cubicles

2′ 6″×4′ 4″. The door is inward opening, and has a hook on the back. The partitioning is 6′ 4″ in height and starts from a level of 4″ from the floor. The bench seat is 2′ 6″ long, 13″ deep and 17″ in height. The light is recessed and operated by a pull cord and switch.

Sections I and II: Male nursing and female and male ancillary staff

The accommodation provided for the male nursing and female and male ancillary staff is of a similar design but without changing cubicles. The number of bays and the facilities at present allocated to these grades are:

Section	Locker bays	Lockers per bay	Total lockers	Showers	W.C.s	Urinals	Incinerators
I Male Nursing	2	16	32	1	2	1	—
II Female Ancillary	9	16	144	3	5	—	1
II Male Ancillary	3	16	48	1	2	1	—

Four extra lockers have been added to the female ancillary changing area.

The entire unit has been designed for flexibility in numbers and between the sexes. Each corridor has a separate entrance and movable partitions may be fitted to accommodate an increase or decrease in the various grades of staff.

Staffing of unit

The unit is staffed from 7 a.m. to 10.30 p.m. daily. The staff consists of one full-time forewoman (relieved by the Domestic Superintendent), two full-time

domestics from 7.30 a.m.-4 p.m. and 7.30 a.m.-2 p.m. (both having duties in main hospital), and one part-time domestic from 4.30 p.m.-10.30 p.m.

Uniform

The nursing staff do not travel to and from the hospital in uniform. Dirty uniforms are disposed of daily at the central collection point. Laundry books are filled in by full-time nursing staff and sent to the laundry weekly.

Full-time nursing staff uniforms are returned weekly from the laundry to the clean uniform store, uniforms being wrapped separately in polythene. They are checked, arranged and placed in the individual lockers by the forewoman. Sisters' caps and collars are delivered separately and therefore placed in the lockers separately; this prevents the articles being crushed. Part-time staff uniform is returned in bulk and sorted at the changing block before being placed in individual lockers. Uniform is not checked as regards numbers, only with regard to condition. The size of the bundles varies slightly from one grade of staff to another but a frequently encountered size of 18″ × 10″ × 8″ could be fitted into the space in the top shelf of the locker.

General comments

There are no separate facilities for drying wet clothing and articles such as umbrellas. These are placed inside the lockers and it was said that the warmed air dried off any dampness in outer garments during a normal period of duty. Especially wet items are dealt with by the supervisory staff.

It was claimed that the absence of a drying room improved security, however the drying of items inside lockers can lead to a noticeably " musty " atmosphere.

No sitting rooms are provided. This is a deliberate policy as it was considered that the coffee rooms in the planned new dining-room should be used as common rooms. At present, however, some members of staff return to the changing bays to eat sandwiches at meal breaks.

The unit is well run and the fabric of the building is in good condition. The Matron and the nursing staff were favourably impressed with the accommodation, and the improved standard of amenity. They had no adverse comments to make. The facilities allowed centralisation of the services needed to improve changing accommodation, and simplified the management and overall control.

13.2 The Survey

The survey was carried out in the female nursing staff section only. The corridors were named A, B and C for ease of identification. (Plan at page 43.) Table I sets out the facilities provided in each of these corridors. Continuous observations were made of all staff entering, the number of locker bays used, and the use made of the changing cubicles and sanitary facilities.

TABLE I

Section I	Locker Bays	Lockers per Bay	No. of Lockers	Extra Lockers	Total No. of Lockers	Showers	W.C.s	Changing Cubicles	Inciner-ators
Corridor A	10	16	160	21	181	2	3	13	2
Corridor B	7	16	112	15	127	2	3	9	1
Link Corridor C				3	3				

The findings were:

1 **The total number of staff using the accommodation**
Table II demonstrates the total number of nursing staff who entered either corridor A or corridor B during the survey.
An hourly time scale was used.

TABLE II

Time	Corridor A	Corridor B	Total
7- 8 a.m.	50	50	100
8- 9 a.m.	8	5	13
9-10 a.m.	14	7	21
10-11 a.m.	4	0	4
11-12 noon	3	1	4
12- 1 p.m.	12	7	19
1- 2 p.m.	21	16	37
2- 3 p.m.	10	8	18
3- 4 p.m.	5	4	9
4- 5 p.m.	15	6	21
5- 6 p.m.	3	1	4
6- 7 p.m.	1	0	1
7- 8 p.m.	9	6	15
8- 9 p.m.	31	42	73
Total in 14 hours	186	153	339

2 **The total number of lockers used**

Each nurse entered the changing accommodation at least twice during her period of duty, once to change into uniform and once to change out of uniform before leaving the hospital.

Table II shows that the total number of staff who entered the changing accommodation was 339, thus the total number of lockers used was not more than half this number. Fifteen nurses, however, returned to their changing bays at meal breaks either to eat their sandwiches or to sit and rest. The subtraction of this number of journeys (1×15) gives the total number of lockers used $339-(1 \times 15) \div 2 = 162$. Thus of the 311 lockers installed, only 162 were used in one day. This is a 52% use of the lockers and results in a corresponding use of all the accommodation facilities.

An analysis of the lockers allocated to full-time and part-time staff was carried out and it was found that over one-third of the total lockers installed were used by part-time night staff and that the remaining lockers were divided more or less equally between full-time and part-time day staff. In a breakdown of the part-time night staff's hours of duty it was found that of the 123 lockers provided:

2 stood unused for 3 days per week.
45 stood unused for 4 days per week.
70 stood unused for 5 days per week.
6 stood unused for 6 days per week.

In fact for four days out of the seven per week, over one-third of the total lockers supplied were unused. The actual utilisation of a locker is restricted to that period of time during which it contains outdoor clothing, unless it serves as a store for clean uniform. This period, in the case of part-time staff may be as short as four hours per day.

3 **The peak period of use**

The peak changing periods occurred between 7 a.m. and 8 a.m. and between 8 p.m. and 9 p.m. when 100 and 73 staff respectively entered, changed and left the block. These peaks occurred when day and night staff overlapped and thus used the accommodation at the same time. There was to a lesser extent a third peak period between 1 p.m. and 2 p.m. when 37 staff entered the changing block.

At no point during these peak periods was the total number of lockers used more than one-third of the total number of lockers available (Table II).

4 **The peak number of staff in the locker bays**

Table III shows, on an hourly basis, the total number of staff entering each of the locker bays throughout the survey. The locker bays were used for 52% of the total period they were available. The maximum number of staff to enter a bay in any one hour was 10 and this occurred on only three occasions and only during the peak changing periods.

TABLE III

Corridor A

		A.M.					P.M.									
Locker Bays	No. of Lockers	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
1	19	4	–	1	1	–	2	1	–	–	2	1	–	1	2	–
2	19	5	–	3	1	–	3	3	1	1	4	1	1	1	3	–
3	19	10	–	2	–	–	–	5	1	1	1	–	–	3	5	2
4	19	7	–	1	2	1	3	1	2	–	2	–	–	1	3	–
5	19	7	1	1	–	–	–	4	1	2	1	–	–	–	6	–
6	18	6	–	1	–	–	2	2	1	–	1	–	–	1	5	–
7	18	6	1	3	–	–	1	3	3	–	1	–	–	–	2	–
8	18	4	4	–	1	–	1	1	1	–	2	1	–	1	2	–
9	16	1	1	2	–	1	–	–	–	1	–	–	–	1	1	–
10	16	–	1	–	–	1	–	–	–	–	1	–	–	–	–	–

Corridor B

		A.M.					P.M.									
Locker Bays	No. of Lockers	7-8	8-9	9-10	10-11	11-12	12-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
1	18	6	2	1	–	1	–	3	1	2	–	4	–	–	5	–
2	18	7	2	4	–	–	1	8	–	1	3	–	–	1	7	–
3	18	3	1	1	–	–	3	1	–	1	1	–	–	–	1	–
4	18	7	–	1	–	–	1	–	3	–	–	–	–	–	5	–
5	18	8	–	–	–	–	2	1	1	–	1	–	–	2	7	–
6	18	10	–	–	–	–	–	2	1	–	1	–	–	1	10	1
7	19	10	–	–	–	–	–	2	1	–	1	–	–	1	10	1

Table IV indicates in greater detail the maximum number of staff who entered the locker bays at peak periods, and the frequency with which these numbers occurred. The time scale is on an hourly basis.

TABLE IV

Greatest number of staff per locker bay per hour	Frequency with which these numbers occurred
10	3
8	2
7	6
6	5
5	5

At no point outwith the peak periods did the number of staff who entered the locker bay in one hour exceed four.

The occupancy of the locker bays at five minute intervals is shown in Table V. The greatest number of staff who occupied a locker bay in any five minute period was six. On 224 occasions out of the 271 times the locker bays were observed, they were being used by only one person.

TABLE V

Number of occasions locker bays were occupied at 5 minute intervals	Total number of staff
224	1
35	2
7	3
2	4
2	5
1	6

The length of time spent by staff in locker bays varied considerably. This was especially noticeable at peak periods when staff entered and left the accommodation in an extremely short space of time—one nurse took only three minutes. It was estimated by the observers that the average time spent in the changing accommodation at peak periods was 5-6 minutes and in non-peak periods from 10-15 minutes. The changing cubicles were used twice in the 14 hours of the survey, at 7 a.m. and 4.30 p.m. Only two nurses out of the staff observed sought the added privacy of a changing cubicle. On each occasion, the nurse occupying the locker bay was alone, yet left it to go to a changing cubicle.

The showers were used eight times, one shower being taken at approximately hourly intervals. Sanitary facilities were used 45 times.

13.3 Summary of Survey Findings

1 *Changing block*

1.1 The changing block was underused for the greater proportion of the day.

1.2 There were three peak periods, 7 a.m.-8 a.m., 1 p.m.-2 p.m., and 8p.m.-9 p.m.

1.3 More than half of the total number of staff using the accommodation entered in these three one-hour periods. The remainder entered in small numbers over a period of 11 hours.

1.4 Peak periods occurred when both day and night staff overlapped.

1.5 Changing was accomplished with no hold-ups.

1.6 52% of the total number of non-resident staff used the accommodation in one day.

1.7 Less than 33% of the total number of non-resident staff used this accommodation at peak periods.

2 *Locker bays*

2.1 The peak number of staff in one day in one hour was 10.

2.2 The maximum number of staff in one bay in one five minute interval was six.

2.3 On more than two-thirds of the total occasions the locker bays were observed there was only one person using the bay.

2.4 The sliding door provided a satisfactory level of privacy.

3 *Lockers*

3.1 52% of the total lockers were used on one day.

3.2 Less than 33% of the total lockers were used at peak periods.

3.3 Over one-third of the total number of lockers were allocated to part-time, non-resident night staff and these stood unused for four days of the week.

3.4 There is a very short period of actual locker use in 24 hours.

4 *Changing cubicles*

4.1 Only two nurses sought the added privacy of the changing cubicles.

4.2 The addition of extra lockers in the locker bays, with the consequent loss of available floor space, did not increase the demand for individual changing cubicles.

4.3 The need for so many changing cubicles could be questioned.

5 *Showers*

5.1 One nurse in 20 used the showers.

5.2 Only one shower was used in each corridor at one time.

6 *Toilet facilities*

6.1 One nurse in four used the sanitary facilities.

7 *Uniform*

7.1 Storage is required for a weekly supply of uniform both individually in the locker and collectively in a storage room.

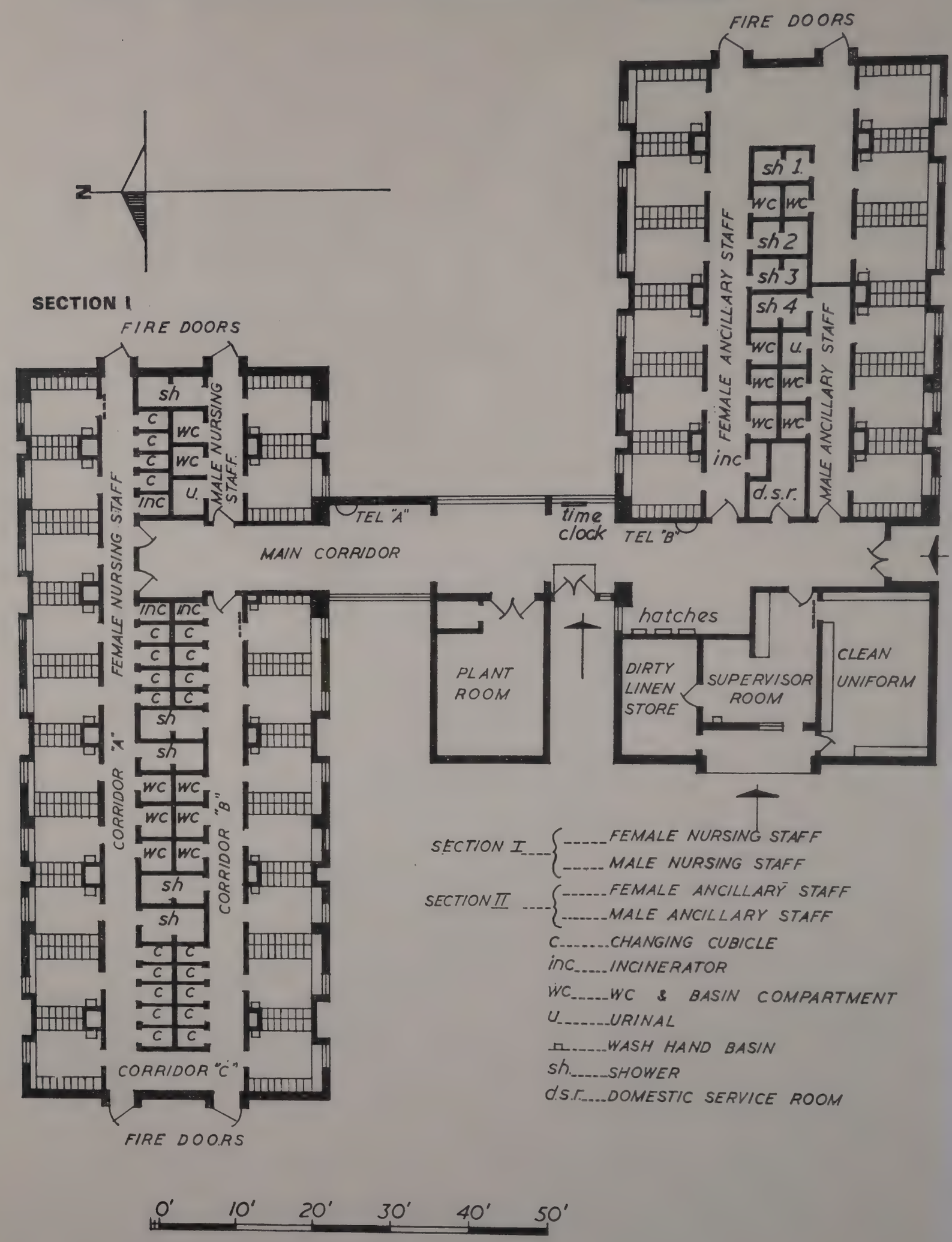
7.2 Time is taken up identifying, sorting and then placing uniform in the lockers on two separate occasions per week.

7.3 The daily disposal of dirty uniform prevented the contamination of clean clothing in the lockers.

8 *Security*

8.1 A high level of security was obtained with an individual locker system.

PLAN SHOWING CHANGING ACCOMMODATION



14 CHANGING ACCOMMODATION OUTWITH THE HOSPITAL SERVICE

14.1 With the co-operation of the respective managements, changing accommodation at six non-hospital situations was reviewed. These included a department store, a modern swimming pool, a technical college and various manufacturing units. All operated a straight-shift system for workers and most employed a proportion of part-time staff. The arrangements for staff changing and the type of accommodation depended entirely on the degree of changing necessary. This ranged from removing only outdoor garments and putting on an overall, to a complete change of outer clothing. All the accommodation reviewed had been designed for staff changing.

14.2 Three broad types of storage had been adopted:

1 An open area with hooks, coathangers or hanging baskets on free-standing racks. These were used both for outdoor clothing and overalls worn at work. Keys of the baskets were retained by the users, usually clipped to the belt of their overalls. Shopping baskets and umbrellas were stored either on top, below or at the end of the racks.

2 Lockers allocated to individuals with keys retained by the users. In some cases separate storage was provided for " clean " and " dirty " clothing for each worker.

3 A supervised cloakroom where workers collected a hanger, changed and returned the hanger with outdoor clothing to the supervisor. The process was reversed when the employees finished work.

14.3 Where only outdoor clothing was removed and an overall put on, the first method was always employed. Where complete changing and the use of protective clothing was necessary, either the second or third method was adopted. Where an overall was the uniform worn, each worker was issued with two and washed them as required. Where protective clothing was required, this was laundered by the firm. Workers were not issued with standard sizes on an exchange basis.

14.4 The only reason for the choice between the second and third methods appeared to be the amount of space required to accommodate hanging baskets as compared with that required for lockers.

14.5 There was no separate allocation of accommodation for different grades of staff. The only division was between men and women. In no instances were individual cubicles available for changing. Generally, staff working in offices either hung their outdoor clothing in their own offices or used adjacent communal hanging space. No special facilities were provided for drying wet clothing. The provision of central heating in the building was considered adequate for this. In only one case had an extra heater been installed.

14.6 In every case w.c.s and washing facilities were adjacent to the changing accommodation. On the female side one w.c. had an incinerator. Showers were provided only where they were considered necessary, e.g., handling chemicals or precision instruments. Sitting space was not directly related to changing accommodation but was provided with the staff cafeteria.

14.7 Small personal possessions and valuables were kept either in employees' pockets or in the locked compartments of lockers or baskets. Padlocks were either provided by the users or issued by the firms on a small charge. Security of uniform was not a problem since this was supplied either on an exchange basis or retained by the wearers.

14.8 **Comments**

Points of difference between the industrial field and the hospital service include:

14.8.1 *Issuing and Laundering*

In industry, where a uniform, other than an overall is necessary, it is allocated from a range of standard sizes on an exchange system. It is laundered by the firms. In the hospital service the greatest proportion of staff is supplied with a number of individually marked items of uniform. This is usually laundered by the hospital authorities. Although some items of clothing are changed daily, the supply of clean uniform is generally on a weekly basis. This means the storage of up to a week's

supply of clean uniform for each person within the changing area. When items of uniform are individually marked they require to be identified and assembled for each person at laundry level and the assembled supply again identified at the changing area. These procedures require a sorting and temporary storage area at both levels.

14.8.2 *Amount of Changing*

In industry, complete changing is only necessary in special situations where protective clothing is required. Otherwise only outdoor clothing is removed and an overall put on. In hospitals, however, the greater proportion of staff require to change completely into a uniform. This affects not only the amount of storage space required but the method of storage adopted.

14.8.3 *Part-time Staff*

The method of employment of part-time staff may affect the amount of storage required in a changing area. " Part-time " in industry usually means part of every working day, whereas in hospital it may mean only part of a week. If part-time hospital staff are issued with a week's supply of individually marked uniform, this requires storage space for the whole of the week although the user only requires access to it for part of the week.

14.8.4 *Allocation of Accommodation*

The only separate allocation of accommodation is between men and women in industry. In hospital it has been the general practice for separate accommodation to be allocated to different grades of staff as well as between men and women.

14.8.5 *Individual Cubicles*

In industry no provision of individual cubicles for changing was observed. This may be related to the amount of changing undertaken. In hospitals, however, most purpose-designed changing accommodation includes individual cubicles.

14.8.6 *Security*

In industry, security of personal clothing and uniform appears to be adequately dealt with either by lockable baskets or by the general supervision of the changing area. No separate provision is made for valuables either within the changing area or at the place of work. Security of uniforms, personal clothing and valuables appears to be a problem in the hospital service. This may be related to an inadequate return of individual uniform from the laundry, leading to unofficial borrowing of items of uniform or to inadequate supervision of the changing area. In some hospitals, small individual lockers for valuables have been installed at ward or departmental level.

14.8.7 *Drying Facilities*

No special facilities are provided for the drying of wet outdoor clothing in the industrial field. In the hospital service, special facilities are being requested for this purpose.

14.8.8 *Showers*

Showers are not provided generally as part of the changing accommodation in the industrial field but only in situations where showering is an essential part of the changing procedure. They are, however, being installed as part of the basic accommodation in changing areas in hospitals.

14.8.9 *Sitting Space*

Sitting-room accommodation related to changing areas is not provided in the industrial field. The staff, however, in these situations work a straight shift whereas in hospitals a proportion of staff work " split " shifts of duty and may require sitting-room accommodation for up to a period of three hours.

14.8.10 *Hours of Use*

In the industrial concerns which were reviewed the changing accommodation was only in use—and this was only supervised—during day-time working hours, i.e., 7 a.m. until 6 p.m. It was never used on Sundays. In the hospital service, changing facilities must be available over a period of 24 hours, seven days per week.

Part Three: PLANNING PRINCIPLES

15 FUNCTIONAL PLANNING

15.1 To remain acceptable over a significant period of time, the planning criteria must satisfy the basic requirements of the user. They must also meet the demands of different hospital sites and layouts and must anticipate, so far as is possible, the fluctuations in the number of non-resident staff. For the efficient development of any hospital planning project it is essential that the operational policies are defined in the early planning stages and non-resident staff changing accommodation is no exception.

15.2 This part of the report sets out factors which have emerged from the study as important stages or mile-stones in planning this type of accommodation. The aspects highlighted are those on which decisions—or lack of decisions—will have the greatest subsequent effect on the type of changing accommodation provided. These represent basic planning problems which require critical examination and to allow a systematic appraisal, each is discussed separately.

16 MAIN ASPECTS

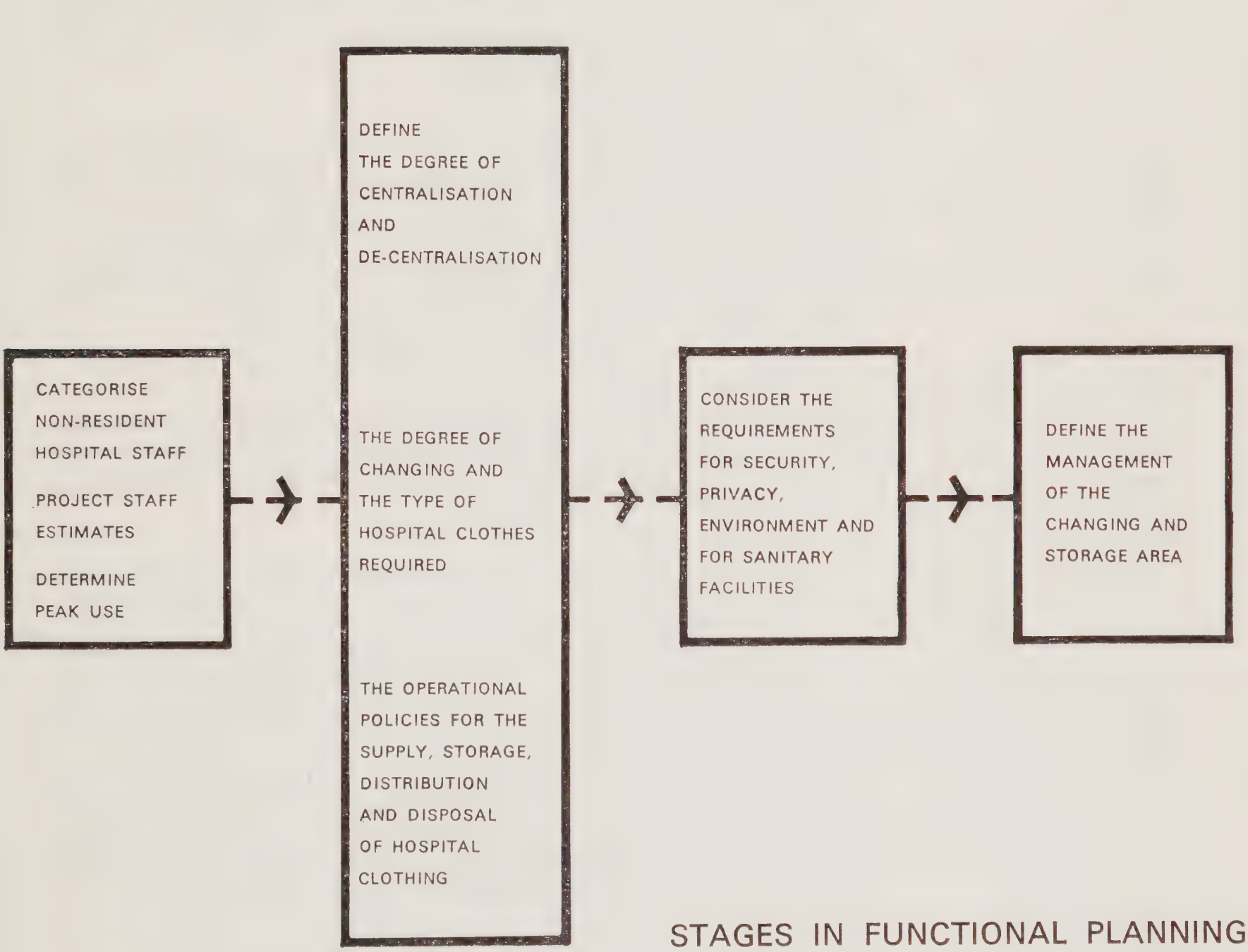
The four main aspects of functional planning which will form an important element in the architect's brief are given in diagrammatic form in the following chart. They are:

I **Relevant facts:** these must be collected.

II **Operational policies:** these must be defined.

III **Facilities required:** these must be considered.

IV **Methods of management:** these must be stated.


I
II
III
IV
CATEGORISE NON-RESIDENT HOSPITAL STAFF
PROJECT STAFF ESTIMATES
DETERMINE PEAK USE
DEFINE THE DEGREE OF CENTRALISATION AND DE-CENTRALISATION
THE DEGREE OF CHANGING AND THE TYPE OF HOSPITAL CLOTHES REQUIRED
THE OPERATIONAL POLICIES FOR THE SUPPLY, STORAGE, DISTRIBUTION AND DISPOSAL OF HOSPITAL CLOTHING
CONSIDER THE REQUIREMENTS FOR SECURITY, PRIVACY, ENVIRONMENT AND FOR SANITARY FACILITIES
DEFINE THE MANAGEMENT OF THE CHANGING AND STORAGE AREA

STAGES IN FUNCTIONAL PLANNING

16.1 **I Relevant facts**

Various aspects should be considered.

a Categories of non-resident hospital staff

In its most simple definition the term " non-resident " refers to staff who live elsewhere than in the hospital. There are, however, several groups who, although technically resident, will require changing facilities and a decision should be made whether or not these should be included.

They are:

Staff in hospital residencies at some distance from the parent hospital who require some form of transport to travel to and from work.
Staff in hospital residencies or houses within the hospital grounds but involving a considerable walking distance to the main hospital.
Staff permitted to travel to and from the hospital in outdoor uniform.

Hospital employees have been classified into ten main categories.* Each category is composed of at least 6-8 different grades of staff of which a more detailed account is given at page 31.

The main categories are:

1 Medical and dental staff
2 Nursing
3 Domestic and ancillary
4 Dispensary
5 Medical auxiliary
6 Hospital operative staff
7 Clerical staff
8 Special grades
9 Craftsmen and tradesmen
10 Other staff (not included above)

Other groups who are not hospital employees may require to be considered for inclusion in the list of those requiring changing facilities. They include visitors who may be, for example, groups of doctors or nurses, friends and relatives of patients, or students of the various disciplines attending hospitals for lectures and clinical demonstrations.

b Projection of staff estimates

There is no uniformly recognised method of calculating the number of staff that any particular hospital will have in five or 10 years. At the same time, some projection of the estimated hospital staffing is necessary as a basis for the allocation of space for non-resident staff changing accommodation. Where, in the past, estimates have proved unrealistically low, the inevitable result has been inadequate provision. Factors which affect staff estimates are set out in the following paragraphs and these may assist in the prediction of a rise or fall in the numbers involved.

(1) *The hospital's place in Regional Hospital Board plans and in relation to other hospitals*

Any proposed or known change of function or type of service to be provided, e.g., the addition of highly specialised units, or the closing down of a hospital within a group and the subsequent redeployment of staff, should be examined.

(2) *Location*

The hospital's situation in relation to transport facilities is important. It is possible that other developments in the area may result in improved transport and this would have a bearing on the proportion of non-resident staff. Hospitals situated in central areas of cities or towns experience fewer transport problems. This aspect, however, is difficult to evaluate insofar as an increasing proportion of non-resident staff may use their own transport. In that case, factors such as car parking facilities may be relevant.
Housing developments in the area and the character of the population may indicate whether a substantial proportion of non-resident staff is likely to be available in the vicinity of the hospital. In addition, the hospital's policy with regard to the provision of staff housing either at or near the hospital should be taken into account.

* Stats/H.S.8 (1966).

(3) *Staff levels*

The proposed staff establishment should be assessed in the light of existing staffing experience and in comparison with regional and national levels. A survey of staffing trends over a period of years with particular reference to part-time staff is of value. It should be borne in mind that numbers of " effective " staff are of limited use; the number of individuals is more important than, for example, a number of posts each of which may represent more than one part-time worker. It may, in fact take up to four part-time staff to make up the equivalent in hours of one full-time worker; the error in space allocation would be substantial if the requirements for changing and storage of four people were equated to those for one.

Alterations in staff levels may result from additional staff employed to cover periods of annual leave and this may be more evident where a high proportion of part-time staff is employed. Sickness levels also warrant comparison with regional and national levels and a review of whether a particularly high or low incidence is likely to continue. Again, the experience in staff turnover should be noted and any factors which might affect this in the future.

(4) *Staff training*

Many hospitals are training schools for students of one or more disciplines. The system of training and the resulting number of staff withdrawn or added to any one hospital should be carefully assessed.

The following patterns merit particular note:

(i) The block system, either in the parent hospital or in a group training school.
(ii) Secondment.
(iii) Study-day and day-release schemes.
(iv) In-service training programmes.

(5) *Residential accommodation*

In 1963 the Ministry of Health issued a memorandum (H.M. (63) 83) which recommended the number of staff for whom residential accommodation should be made available. The hospital policy on residential accommodation for staff is important. If a higher than average number are resident, this may be due to the hospital's isolation, its specialist nature, to a lack of local housing accommodation or to factors of a sociological nature. On the other hand, if residential accommodation at the hospital is unsuitable or limited in amount, there may be a higher number of non-resident staff than would otherwise be the case.

c Determine Peak Use

To meet the requirements of a 24-hour service, seven days a week, facilities for hospital changing must be available for a similar period. Most hospital employees change before they start work and again when they finish. The wide variety of employees suggests the need to review the hours of work for each grade and to obtain information on the number of staff who change and the hours during which the greatest activity occurs. In 1966 the nursing category formed 46% of all non-resident hospital staff and the greatest peaks of changing activity occur in this group when the day staff and night staff overlap, i.e. in the morning from 7 a.m. until 8.30 a.m. and in the evening from 8 p.m. to 9 p.m. Peak periods may vary from hospital to hospital and are directly related to the hours of duty worked. In most hospitals, however, the 12 hours' night shift system is still in operation which obviates the need for changing accommodation to be manned during the night. It is only in exceptional circumstances that entrance to the accommodation would be necessary during the night hours. At the same time domestic and ancillary groups of staff represented 34% of all non-resident hospital staff and the remaining 20% was made up by other categories most of whom work conventional office hours of 8 a.m. to 5 p.m. or some modification of these, as indeed do a high proportion of the domestic and ancillary staff. It is reasonable to suppose that peaks for these grades would occur between 7 a.m. and 9 a.m. in the morning and between 4.30 p.m. and 6 p.m. in the evening. However, variations of up to 30 minutes to one hour occur within grades and

categories of staff and note should be taken of the staggered pattern of starting and completing periods of work.

The majority of hospital employees work for five days a week and for approximately eight hours per day. Taking into account time off for the average sickness rate and holiday periods, the changing accommodation would be used by most hospital employees for approximately 230 days per year. As already noted, if a high proportion of the staff work on a part-time basis, the overall number of persons employed will be increased, it may be doubled and in some cases trebled.

16.2 **II Operational Policies**

a Determine the degree of centralisation and de-centralisation

While the balance of advantage would appear to lie with centralisation of staff changing facilities to serve all categories of staff, it would be unrealistic to oblige employees to walk a disproportionate distance from the hospital entrance to their places of work. If, for example, it took over five minutes to go from the changing accommodation to the work area, it is possible that the facilities would not be used and that improvised changing accommodation would be developed at de-centralised points. In this case de-centralised accommodation should be considered. The type of hospital building and the layout are of obvious importance in weighing the advantages and disadvantages of centralisation as against de-centralisation. Compact, high density, multi-storey types of building present fewer problems in this connection than with the more widely scattered types of hospital layout.

There are particular situations requiring consideration. Some changing accommodation must be directly linked to a specific department and separate consideration may require to be given to hospital staff such as maintenance workers and engineers whose clothing may become dirty and whose places of work may be at some distance from the main building complex.

b Determine the degree of changing and the type of hospital clothing required

A dictionary definition of changing—the difference from a previous state—when modified in the hospital clothing context, involves the degree to which normal wearing apparel requires to be removed, added to or replaced, to permit the wearer to work and/or enter areas of hospital accommodation. This is further dependent on:

(1) The degree of protection required by patients from staff, other patients, visitors and equipment.

(2) Degree of risk incurred by staff and visitors from patients and the use of equipment.

(3) Human comfort factors for the environment and the type of work to be carried out.

(4) Traditional wearing of uniform.

It is for the individual employing authority to determine the need or degree of changing necessary for their non-resident staff in the light of their own circumstances.

The degrees of changing fall into the following groups:

I The complete removal of outdoor, outer and under clothing and footwear and the addition of special clothing, headgear and footwear.

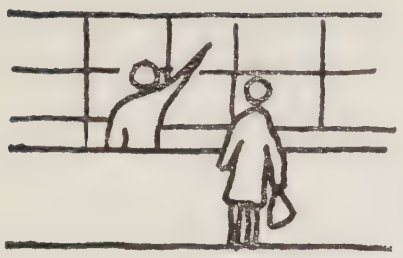
II The removal of outdoor, outer clothing and footwear with the addition of a protective or distinctive covering, possibly headgear and footwear, for example, a uniform.

III The removal of outdoor clothing and perhaps footwear with the addition of a protective covering, for example, an overall or white coat.

IV The removal of outdoor clothing.

The sequence of activities performed for changing degrees, I, II, III and IV and the associated requirements are summarised for easy reference in the following sketches each dealing with one of the degrees of changing listed above. Anthropometric measurements are also given. From these the storage space and the changing space required for each member of staff according to the degree of changing performed, can be gauged.

REQUIREMENTS FOR CHANGING DEGREE I



1. Collect items required from uniform store.

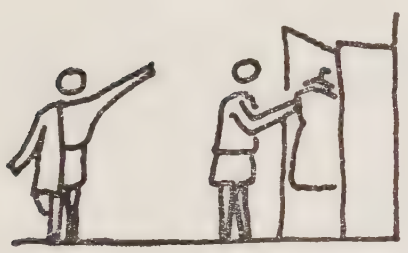
Bulk store for clean uniform
Counter for service and supervision

Normal heating, lighting and ventilation

2. Lay down uniform and personal items.

Laying surface

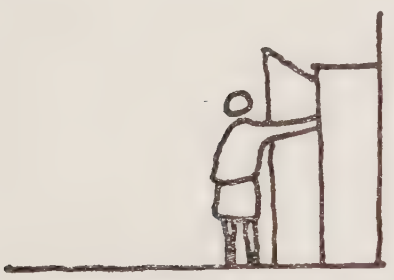
Normal heating, lighting and ventilation



3. Remove and store outdoor clothing.

Changing space
Hanging and laying storage space for clothes during hours of duty

Security
Extra ventilation for drying wet clothes
Normal heating, lighting



4. Store items not required on duty. Collect items required on duty.

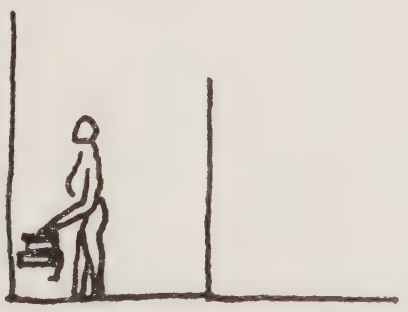
Permanent storage for permanent duty items—e.g. shoes

Security
Extra ventilation
Normal heating and lighting

5. Remove personal outer clothing, including shoes and headgear.

Changing space
Laying space
Sitting space

Some privacy for changing
Extra heating for changing
Normal lighting and ventilation



6. Remove personal underclothing.

Laying space
Sitting space

Complete privacy for changing
Extra heating for changing
Normal lighting and ventilation

REQUIREMENTS FOR CHANGING DEGREE I

7. Put on duty underclothing.

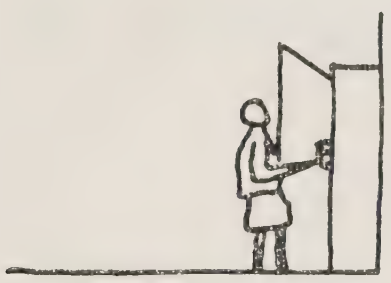
Laying space
Sitting space

Complete privacy for changing
Extra heating for changing
Normal lighting and ventilation

8. Put on duty outer clothing, including shoes and headgear.

Changing space
Laying space
Sitting space

Some privacy for changing
Extra heating for changing
Normal lighting and ventilation



9. Pick up and store personal outer clothing.

Hanging and laying space for clothes during hours of duty

Security
Extra ventilation
Normal heating and lighting

10. Make-up.

Laying space for make-up
High-level mirror

Extra lighting
Normal heating and ventilation

11. Inspect uniform.

Full-length mirror

Extra lighting
Normal heating and ventilation

12. Dispose of used uniform.

Disposal container

Normal heating, lighting and ventilation

REQUIREMENTS FOR CHANGING DEGREE II

1. Collect items required from uniform store.

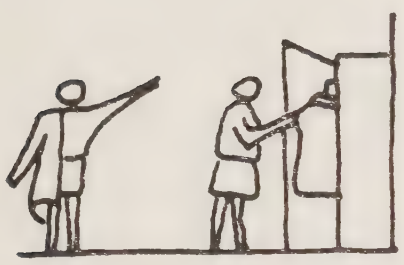
Bulk store for clean uniform
Counter for service and supervision

Normal heating, lighting and ventilation

2. Lay down uniform and personal items.

Laying surface

Normal heating, lighting and ventilation



3. Remove and store outdoor clothing.

Changing space
Hanging and laying storage space for clothes during hours of duty

Security
Extra ventilation for drying wet clothes
Normal heating, lighting

4. Store items not required on duty. Collect items required on duty.

Permanent storage for permanent duty items—e.g. shoes

Security
Extra ventilation
Normal heating and lighting

5. Remove personal outer clothing, including shoes and headgear.

Changing space
Laying space
Sitting space

Some privacy for changing
Extra heating for changing
Normal lighting and ventilation

8. Put on duty outer clothing, including shoes and headgear.

Changing space
Laying space
Sitting space

Some privacy for changing
Extra heating for changing
Normal lighting and ventilation

REQUIREMENTS FOR CHANGING DEGREE II

9. Pick up and store personal outer clothing.

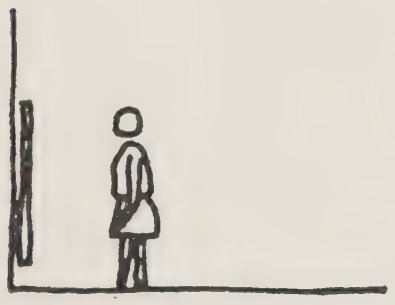
Hanging and laying space for clothes during hours of duty

Security
Extra ventilation
Normal heating and lighting

10. Make-up.

Laying space for make-up
High-level mirror

Extra lighting
Normal heating and ventilation



11. Inspect uniform.

Full-length mirror

Extra lighting
Normal heating and ventilation

12. Dispose of used uniform.

Disposal container

Normal heating, lighting and ventilation

REQUIREMENTS FOR CHANGING DEGREE III

1. Collect items required from uniform store.

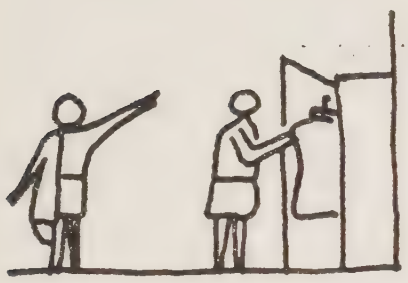
Bulk store for clean uniform
Counter for service and supervision

Normal heating, lighting and ventilation

2. Lay down uniform and personal items.

Laying surface

Normal heating, lighting and ventilation



3. Remove and store outdoor clothing.

Changing space
Hanging and laying storage space for clothes during hours of duty

Security
Extra ventilation for drying wet clothes
Normal heating, lighting

4. Store items not required on duty. Collect items required on duty.

Permanent storage for permanent duty items—e.g. shoes

Security
Extra ventilation
Normal heating and lighting

8. Put on duty outer clothing, including shoes and headgear.

Changing space
Laying space
Sitting space

Some privacy for changing
Extra heating for changing
Normal lighting and ventilation

10. Make-up.

Laying space for make-up
High-level mirror

Extra lighting
Normal heating and ventilation

REQUIREMENTS FOR CHANGING DEGREE III

11. Inspect uniform.

Full-length mirror

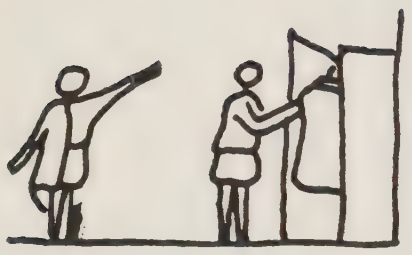
Extra lighting
Normal heating and ventilation

12. Dispose of used uniform.

Disposal container

Normal heating, lighting and ventilation

REQUIREMENTS FOR CHANGING DEGREE IV



3. Remove and store outdoor clothing.

Changing space
Hanging and laying storage space for clothes during hours of duty

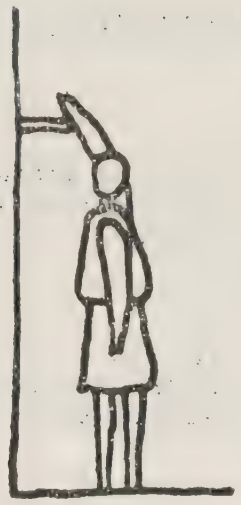
Security
Extra ventilation for drying wet clothes
Normal heating, lighting

10. Make-up.

Laying space for make-up
High-level mirror

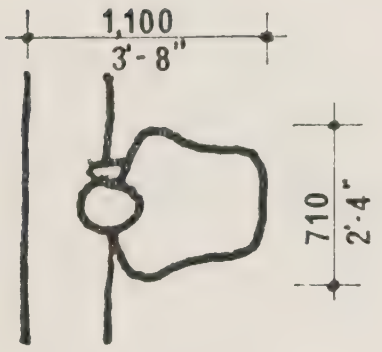
Extra lighting
Normal heating and ventilation

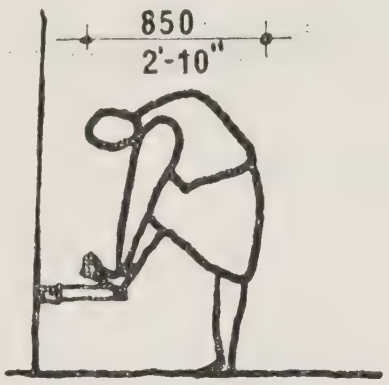
Arm span of 1,650 (5′ 6″)* for putting on coats



Maximum vertical reach for average woman 1,900 (6′ 4″)

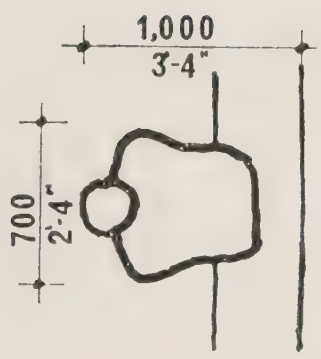
Obstruction of locker doors by seated person

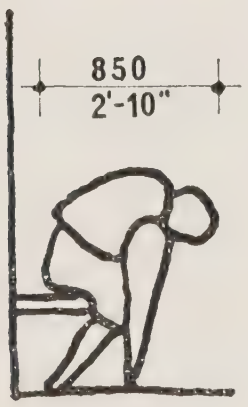




Putting on shoes — 1

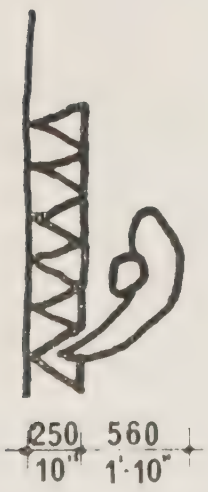
Clearances must allow for locker doors



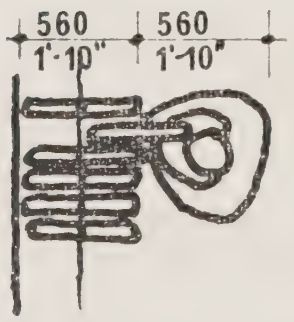


Putting on shoes — 2

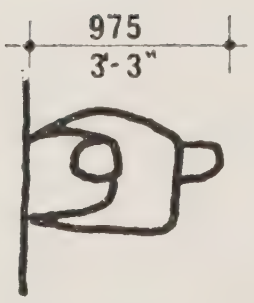
Average woman has an eye level of 1,500 (5′ 0″) and an easy reach into a deep cupboard of 1,650 (5′ 6″)



Putting coats on a peg



Putting coats on a hanger



Getting into low shelves

Hanging baskets when loaded are heavy. Approximately 8 kg. (16 lbs.)

* Metric units used in this section are natural equivalents of the imperial measurements.

c The Operational Policies for Hospital Clothing

The final selection of the clothes storage unit and the general management of changing accommodation are influenced directly by the operational policies concerning the supply, storage, distribution and disposal of hospital clothing.

(1) *Supply*

It is the responsibility of the employing authority to determine the clothing or uniform for each category and grade of hospital staff according to the work performed and the working environment. Hospital staff are not obliged to purchase the approved hospital clothing for their grade. This is supplied and the distinctive uniforms worn at present serve as a means of identifying different grades of staff. The majority of hospital uniforms are measured, fitted, marked for identification, issued and retained for the sole use of the individual employee while employed by a particular hospital authority.

The number of articles comprising a uniform varies from a single item to up to seven separate garments. The supply and issue of uniform on a personal basis entails the need for each item to be individually identified both at the laundry and again collectively in the changing area. This is time consuming in practice and entails double handling and double storage space.

A recent report[53] on uniforms for nursing staff has suggested the issue of one garment with the possible addition of a belt and one over garment, these would constitute the basic nursing uniform. This uniform would be supplied on a personal basis. It is possible that in future the need for personally owned uniforms would be replaced by the issue of stock uniforms coded by size and length. Again, disposable items may provide another method of supplying uniforms. The space requirements will clearly be affected by trends of this kind and the more closely they can be identified at the planning stage the better.

The number of items to be issued, i.e., the quantitative aspect of the supply problem, is dependent on the number of changes performed by each employee. This varies with the working environment and the type of work carried out. A few require to change several times each day; others may only exchange their hospital clothing on a weekly basis. The laundry service is important in relation to questions of supply. The time interval between soiled uniforms being removed and returned ready for use has an influence on the number of articles to be issued at one time. It is influenced by the overall capacity and output of the laundry together with geographical aspects and transport facilities. Projected laundry developments must be taken into account as an important element of the total system of supply in relation to hospital clothing.

The method of transporting uniform to the individual hospital from the laundry varies in relation to the two main systems of issue, i.e., whether uniform is provided on a personal or a non-personal basis. When on a personal basis, it is issued in some form of container, for example, a cardboard box, a linen or polythene bag or as an identifiable bundle. The dimensions of these vary according to the method of folding or packaging, unless the size of the container is fixed, e.g., the cardboard box. Where items of clothing are supplied in bulk, the main factor is the number of items supplied and the range of sizes involved.

(2) *Storage*

Storage takes into account the holding, availability, security and issue of uniforms, and again, this may be based on personal issues in separate storage units with the employee retaining his or her supply and having the items available on demand, or provision in bulk. It is important to ensure that storage units are capable of holding the issue of uniform according to the frequency of delivery. Space to hold personal containers will be required at the laundry, the delivery point in the changing area and at the uniform holding point or point

of issue. Where items are issued in bulk, storage and sorting space will be required at the delivery point in the hospital or at the holding point in the changing area. With either system it is important to identify and, if possible, to eliminate double handling. The storage of uniform at this holding point may take the form of pigeon holes, drawers or open shelving. It may be alphabetically arranged for ease of identification or coded by size and length.

(3) *Distribution*

This may either be supervised or unsupervised and the space required depends on the amount of uniform issued, the frequency and method of delivery and the type of containers involved. An exchange system of distribution implies that uniform is held by the employee at some point either in a clean or dirty state. If so this precludes the allocation of part or all of the personal storage space on a daily basis.

(4) *Disposal*

It is a frequent practice that personally issued uniform is retained in a dirty state by the employee and returned to the laundry in the container in which it was originally supplied. It is thus possible for clean uniform and personally owned outdoor clothing which is also retained by the employee to become contaminated. Soiled uniform should not be permitted to serve as a potential source of the spread of infection and this practice is to be deprecated. It is desirable to dispose of uniform at a central point immediately after use. The storage space required in connection with disposal depends on the amount of uniform involved and the frequency with which it is uplifted and returned to the laundry for re-processing.

16.3 III Facilities Required

a Security

This can be a difficult problem due to the multiplicity of hospital entrances and exits and the large number of people continually circulating. There is, however, a need to provide security for both hospital and private articles of clothing and the small personal possessions of employees. The hospital authority should clearly define the extent of the responsibility it undertakes.

An increased measure of security is obtained by having a single entrance and exit to the changing accommodation and by providing supervision. This can either be specific and directed to the issuing and retaining of uniform, or may take the form of general supervision of an entire area of accommodation. If security is provided by the individual storage units themselves, espagnolette bolts with locks may be fitted to ensure greater safety. The doors of storage units should only be omitted if the units are directly supervised.

Most hospitals provide security in the form of lockable containers, either lockers, lock-ups, or in the lockable compartment of hanging baskets. The employing authority may provide a padlock and key or request the employee to provide his own. In either case where the member of staff locks a permanent locker, the responsibility rests with him or her. Lock-ups and lockers do not provide complete security. Padlocks may not in fact be locked; lockers can be forced open and keys frequently fit other padlocks. These measures do, however, provide a significant degree of security but a considerable amount of administrative time can be lost searching for locker keys, obtaining master keys, arranging for padlocks to be sawn off or keys to be re-cut. Self-dialled padlocks can be misused and lockers may, in fact, be left open due to carelessness.

When clothes are stored under supervision and no individual security is provided, the responsibility lies with the employing authority and the supervisory staff during the period the accommodation is in actual use provided always that the clothing is deposited according to a prescribed procedure. This in turn creates the need to ensure that no unauthorised members of staff are allowed into the clothes storage area. Access to and from this area should thus be easily controlled.

b Privacy

The necessary level of privacy is proportionate to the degree of changing involved and the segregation of the sexes. Regardless of sex, however, the greatest degree of privacy will be necessary when there is a complete change from one set of garments to another. If, in addition to outdoor clothing and footwear, outer clothing is removed, it is considered that a choice should be available to the individual of changing either in small groups, say up to 25 people at any one time, or of changing individually in private. If only outdoor clothing and footwear are to be removed, the change into hospital items can be effected by larger groups of say up to 50 people, and without any sex differentiation. The projection of silhouettes should be avoided.

c Environment

The level of heating and ventilation in changing accommodation is directly related to the degree of changing involved; it is, naturally, highest in those areas where a complete change of clothing is carried out. The avoidance of draughts and the provision of a satisfactory level of lighting are also important. Suitable storage space for the necessary cleaning equipment should be available.

(1) *Waiting rooms*

There is a need to provide an area adjacent to the non-resident staff changing accommodation where staff can sit and wait in comfort. This is particularly important in those hospitals where public transport is infrequent.

(2) *Wet clothing*

The provision of facilities for drying outdoor clothing and umbrellas is a real but rather intractable problem. It was noticeable, however, that the industrial firms visited did not find wet clothing a major problem. Their staff used the same accommodation regardless of weather conditions and without detriment to their clothing or adverse comment from the staff. Nevertheless it is considered that hospital authorities should make some provision for this, though it would be impractical to provide an area sufficiently large to accommodate outspread clothing and opened out umbrellas. Some hospitals have installed a boosted hot-air system whereby air currents are circulated through the accommodation. This type of provision has been found satisfactory and appears to be reasonably simple to install.

Clean, well-ventilated, well-maintained accommodation is important to the general environment and the layout and methods of storage should facilitate this.

d Sanitary facilities

Recommendations on the provision of toilet, washhand basin and shower accommodation are available, in Building Note No. 18. Estimates for such facilities should be based on the peak use of the accommodation. Additional toilet facilities are generally provided at the individual places of work or, in the case of visitors, in association with the hospital entrance. Shower compartments should be designed to keep the users outer clothing dry. The shower nozzle should be adjustable and provide a spray from shoulder height. A soap tray should also be provided.

A decision should be made on the supply of towels and whether these are supplied by the hospital or by the employee. Storage and disposal facilities must also be considered.

16.4 IV Methods and Management

16.4.1 " Staff changing " entails an integrated series of activities and services. Storage for personal clothing, the sequence of activities leading to the issue of hospital clothes, the removal of used items and the general organisation of changing space, represents an aspect of hospital administration which requires to be objectively managed and controlled. In this section, methods are reviewed by which storage and changing space may be effectively utilised.

16.4.2 The numbers of non-resident staff are increasing in all grades, both full-time and part-time. It should be noted, however, that on average the full-time hospital employee is only available for work for approximately 230 days out of 365 per year, taking into account a five-day week, annual and public holidays, and time lost through sickness.

16.4.3 For all but a few items the time utilised for storing personal non-hospital clothing is restricted to the employees' hours of work, the maximum being approximately 12 hours; the minimum about 4 hours. In the case of the part-time staff, the hours of duty fall considerably; in one survey it was found that out of the total number of permanently allocated lockers, over one-third were used for only 3 days per week.

16.4.4 Most hospitals supply an individual storage unit—either a locker or hanging basket—on a permanent basis for each of their employees. Regardless of hours of duty and periods of absence, this storage unit is retained by the employee during his period of stay with the particular hospital. The unit serves a dual purpose. It stores a variable amount of personal non-hospital items and a supply of hospital clothing. Depending on the work performed and the frequency with which dirty uniforms are dispatched to the laundry, the clothing in the storage unit may be clean or dirty. Where lockers are used to store a supply of hospital uniforms, the period of utilisation extends to 24 hours in every day. It does, however, appear an over-provision to have a space of approximately $0.25m^3$ (9 cu. ft.) to contain uniform taking up about 0.8 cu. ft.

16.4.5 Irrespective of the issue of uniform on an individual basis or in stock sizes, reception at one central point facilitates delivery and the control of storage. A reasonable estimate of space requirements may be based on a daily issue supplied to the hospital on a weekly basis. If a clean uniform is supplied and disposed of daily and there is no holding of uniforms at any point by employees, it is possible to allocate the storage unit on a 24-hour basis.

16.4.6 The number of units to be provided should be based on the maximum number of individuals requiring storage facilities for their personal clothing at one time and this estimate must take into account the hours of duty worked. This is a major element in the work of management and control. If hospital uniforms are issued and retained by individual employees, it is not possible to operate any system of allocation of storage units other than by providing at least one locker on a permanent basis. This also applies when staff are issued with uniform on a weekly basis.

16.4.7 The maximum number of storage units in operation at the peak periods will not be more than two-fifths of the total number of staff requiring storage facilities. Nursing staff provide a 24-hour service and it is probable that in the near future they will be supplied with a daily issue of uniform. The hours of duty vary in different hospitals, some operating a split-shift system, others straight shifts but in all there is some form of staff overlap which must be taken into account.

16.4.8 It is recognised that in the question of usage of space, there are difficult problems in relation to both planning and management. It is an aim of hospital planning in general to avoid underused areas of accommodation and the resolution of factors concerning capital cost on the one hand and running expenses on the other is, perhaps, the core of the problem with which planning groups are faced.

16.4.9 **The selection of a suitable system**

Many factors affect the final decision to adopt one particular method of clothes storage and to provide a specific type of changing accommodation with related facilities for non-resident staff.

As a background to the discussion of these, the main requirements of the two groups most closely associated with changing accommodation, the user and the administrator are given below together with a list summarising the basic planning criteria.

a The user requires:

(1) Accommodation which permits changing into and out of uniform without delay or frustration.

(2) Storage of personal clothing and small miscellaneous items in security.
(3) Easy access to and from the changing accommodation both from the hospital entrance, and the place of work.
(4) Shower/toilet facilities.
(5) A comfortable environment, i.e., heating, lighting, ventilation and privacy commensurate with the degree of changing involved.

b The administrator requires:

(1) The provision of accommodation within current cost limits.
(2) Low running costs and accommodation which makes the best possible use of the facilities provided.
(3) Built-in flexibility to cope with increases and decreases in numbers and in the proportion of men and women employed.
(4) Accommodation which is acceptable to staff and contributes to the maintenance of morale.
(5) Easy administrative control.

c Basic planning criteria:

(1) Realistic estimates of non-resident staff.
(2) Peak period, work patterns, maximum use of the changing accommodation in 24 hours, established for all grades of non-resident staff.
(3) Changing not directly linked to a specific department should be centralised, the only division being between male and female.
(4) The degree* of changing for each grade of staff.
(5) The type of uniform and number of changes per day for each grade.
(6) Central issue, storage, and disposal of uniform.
(7) Uniform storage space based on daily issue and change of uniform and a weekly supply.
(8) Privacy while changing based on the degree of changing involved.

Changing Degree I	Individual privacy.
Changing Degree II	Up to 25 people at one time.
Changing Degree III-IV	Up to 50 people at one time.

(9) Environmental factors comply with the degree of changing.
(10) Sanitary facilities provided according to the guidance in Building Note No. 18—but estimates based on peak use.
(11) A waiting area provided.
(12) Size of the storage unit commensurate with what it has to store.
(13) Individual security provided by the storage unit.
(14) Supervisory staff required to manage and control the area.

16.4.10 Dominant factors

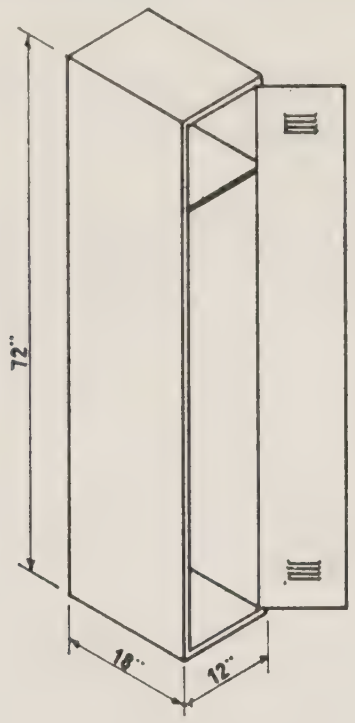
To plan non-resident staff changing accommodation which is equally satisfactory on all counts, appears to be an impossible task but an acceptable solution should be reached if the two dominant factors affecting planning decisions are systematically examined and assessed. They are, the storage system and the method of storage allocation.

* See page 50.

a Storage system

By and large the storage of non-hospital clothing falls into two types, the locker and the hanging basket. These can be either floor standing or in two-tiers. Each provides facilities which are acceptable under certain conditions and both are limited by certain criteria.

(1) *Full-length locker*



*Dimensions**

Height	72″ (1,800mm.)
Breadth	12″ (300mm.)
Depth	18″ (450mm.)
Base	
Plinth or legs	6″ (150mm.)

Fabric

Steel with stove enamel finish.
Wire mesh.
Fibre glass.

Design

Shelf 12″ (300mm.) from the top.
Rail for hangers, coat hooks.
Ventilation by louvres.

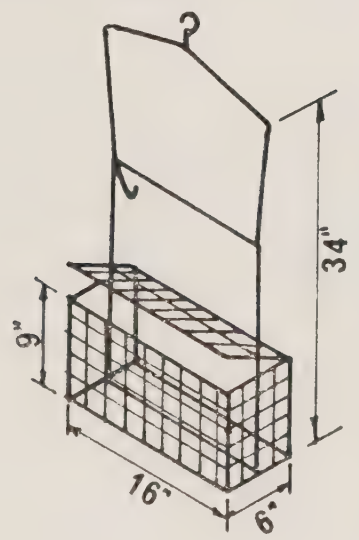
A free hanging space of approximately 5′ 0″ (1,500mm.) is provided for outdoor/outer clothing. A laying surface for hats/bags, gloves, etc. Shoes/boots are stored at the foot of the locker.

* Variations may be found in each of the dimensions quoted.

Comment

(i) The amount of storage space provides good flexibility. Wet clothing may be dried within a well-ventilated locker.
(ii) 12″ (300mm.) spacing can be equated to the space taken up by the hanging basket.
(iii) A minimum depth of 22″ (550mm.) is required to hang garments adequately.
(iv) The position of a locker is fixed, small hangers may be removed as desired.
(v) A week's supply of uniform may be stored in this system.
(vi) Maintenance is minimal.
(vii) It is not possible to have a two-tiered system of lockers, using the standard 72″ (1,800mm.) locker.
(viii) A locking device is normally provided on the door of the locker and provides individual security.

(2) *Hanging Basket*



*Dimensions**

Height	34″ (850mm.)
Breadth	6″ (150mm.)
Depth	16″ (400mm.)
Basket section:	
Depth	16″ (400mm.)
Breadth	6″ (150mm.)

A lid may be provided.

Fabric

Steel mesh with a nylon or P.V.C. covering.

Weight

4-6 lbs. (approx. 2-3kg.).

Position

Fixed to a rail or stand at 8″ (200mm.) spacing or detachable either in single or double tiers.

Division

Wire mesh partitioning may be provided at 12″ (300mm.) centres. A free hanging space is provided for non-hospital clothing and a laying surface, and storage within the basket section, for bags, shoes, gloves, etc.

* Variations may be found in each of the dimensions quoted.

Comment

(i) The amount of storage and hanging space is strictly limited. Difficulties may arise in storing certain garments, i.e. non-opening dresses, and articles which have to be folded over the central rail. In wet weather, shoes cannot be stored in the basket section without dampening other garments, they must therefore be stored elsewhere, e.g., on a shelf beneath the hanger. Umbrellas, and crash helmets, are difficult to store and must be attached in some way to the basket section.

(ii) Spacing should be at 12″ (300mm.) centres to permit easy access. There is, therefore, no saving in the space over the 12″ (300mm.) locker.

(iii) If hangers are in two tiers, a 50% saving in space could be made but there may be difficulty in getting them off and on to the top rail.

(iv) If the hanger is fixed it is difficult to dress it.

(v) If the hanger is detached, extra circulation and laying space has to be provided, account must also be taken of the weight of a loaded hanger.

(vi) A week's supply of uniform cannot be stored in this system.

(vii) Maintenance is minimal.

(viii) Security may be provided by means of a lid and padlock in the compartment section. This gives individual security for a limited number of articles.

b Allocation of storage units

The allocation of lockers or hanging baskets on a temporary or permanent basis is a management decision. The decision directly affects the planning and space requirements of changing accommodation. Irrespective of the type of clothes storage employed, allocation may take one of two forms; it may be permanent or temporary.

(1) *Permanent allocation*

(i) Every employee retains one locker for use throughout the period of employment.

(ii) There is only one allocation, i.e. when the employee starts work.

(iii) Articles held " in use " may be stored by the employee and used when needed, i.e. cloaks, shoes, shoe cleaning material, etc.

(iv) There is poor utilisation of the available storage facilities for full-time staff and even less for part-time staff.

(2) *Temporary allocation*

(i) Storage facilities are provided daily for the peak number of staff. This calls for administrative staff to allocate and control the storage units.

(ii) Permanent small storage units, adequate for those articles held " in use " must also be provided.

(iii) Initial capital costs and floor area requirements are reduced.

(iv) The floor area taken up by the full-length lockers allocated on a daily basis, and the small individual lockers on a permanent basis, provide a saving of 40%* in storage space.

(v) A saving in first cost must be considered in relation to the added running costs of employing supervisory staff.

* If total staff involved=300
on a 24-hour temporary allocation

2/5ths of total staff require full-length lockers	=120
plus	
300 small personal lockers	= 60
(1 tier of five small lockers is equal to 1 full-length locker)	
∴ Total lockers required	=180

Balance (300—180)=120 lockers or 40% of 300

16.4.11 **Methods of storage and changing**

16.4.11.1 The two main methods, lockers or hanging baskets, are described below. The following requirements apply to both:

1 *Hospital uniform*

The storage and disposal of hospital uniform should be at one central point in the non-resident staff changing accommodation. It should be issued " on demand " and should be disposed of immediately after use. (At page 70.)

2 *Waiting area*

A peak use will frequently be for about 20 members of staff; this would require an area of 250 sq. ft. (23.23m²).

3 *Sanitary facilities*

This should be based on the provision in Hospital Building Note No. 18, modified for peak use. For 36 staff, for example, 288 sq. ft. (25.92m²) would be required. (At page 72.)

4 *Changing space*

A space of 13 sq. ft. (1.21m²) is required per person for the movements involved in changing. Approximately 12% of the total non-resident nursing and 20% of domestic and ancillary staff employed are likely to change at any one time. This is based on:

(a) The average number of staff coming on duty at any one time.

(b) The staff overlap.

(c) The rate of entry to and exit from the changing accommodation.

(d) The length of time actually spent in changing.

5 *Storage space* (*outdoor clothing*)

With a permanent allocation:

For changing degree II allow one changing space to every 8 storage spaces.

The category of staff most likely to comprise changing degree II is nursing staff. The average number of nursing staff to be on duty at any one time is approximately 1/5th of the total nursing staff employed (Appendix A). To cover peak periods, i.e. the staff overlap, space requirements for 2/5ths of the total staff are necessary. This assumes that each employee will change at exactly the same time, which, as expected was not borne out in the survey when staff entered and left the changing accommodation in varying numbers within 5 minute intervals. There was, however, a peak period of both arrival and departure. There was also a cumulative build-up of staff, who had already changed, but chose to talk or wait for their friends, instead of completing the changing activities within the average 5 minute period. It is considered that a ratio of 1 : 8 storage spaces will adequately cover the number of staff likely to change at one time, approximately 12% of the total staff employed.

For changing degrees III and IV allow one changing space to every 5 storage spaces.

The category of staff at present most likely to comprise changing degree III is the domestic and ancillary staff who form 34% of all non-resident staff. The peak number of staff cover the morning and early afternoon periods; and a higher proportion of staff will come on at the one time than will be found in the nursing estimate. It is assumed that the rate of entry to and exit from the accommodation will be similar in pattern to that of the nursing category. Staff do not change to the same degree and it is considered that the length of time spent in changing will be less than 5 minutes. Office workers and other staff falling within changing degree IV will, by and large, come on duty at the same time,

although there will again be a staggered pattern of entry and exit. The time taken up by changing will be short, and it is considered that the ratio of 1 : 5 will also be adequate.

These ratios may be modified where lockers or hanging baskets are allocated on a temporary basis. In this case allow one changing space to every 4 storage spaces.

Allocation in the ratio of one changing space to every 4 storage units (1 : 4). The estimate of 12% of the total number of staff changing at any one time remains applicable but, as the number of lockers allocated is 2/5ths of the total number of non-resident staff, the ratio becomes approximately, 1 : 4.

The estimate for temporary allocation, i.e. 2/5ths of the total staff, is applicable to staff covering a 24-hour period. At the present time this does not apply to all hospital employees. It is considered that a permanent allocation of storage units is advisable for those working from 8 a.m.-5 p.m. for five days per week, unless a firm estimate can be made of the likely number of staff to be on duty at any one time.

16.4.11.2 **Lockers**

a Allocated to staff on a permanent basis

Quantity

With this method one full-length locker must be allocated to each member of staff. This involves a usage of between 4 to 12 hours per day, for some 96-230 days per year. (Appendix A.)

The staff will change within the same area as they store their outdoor clothing. No additional storage space is required. Since the key is held by the individual member of staff, security is the responsibility of the individual employee. No direct supervision of the locker area is necessary.

The space requirements based on locker size are:

(i) 12″ × 22″ × 72″ [300mm. × 550mm. × 1,800mm.] (page 71). With this size of locker 9.0 sq. ft. (0.81m.²) must be allocated per person. (Page 73, plan A.)

(ii) 8″ × 22″ × 72″ [200mm. × 550mm. × 1,800 mm.] (page 71). With this size of locker the area allocated per person is 8.0 sq. ft. (0.72m.²). (Page 73, plan B.)

b Lockers allocated on a temporary 24-hour basis to individual members of staff

Quantity

With this method one full-length locker is allocated to each member of staff for their spell of duty. Thus the total number of lockers required is 2/5ths of the total number of non-resident staff employed (see Appendix A). A small personal locker is also required for each member of staff. These lockers must be allocated on a permanent basis. This method allows the use of each locker for 16-18 hours per day throughout the year.

This method involves additional work in the allocation of lockers.

The staff will change within the same area as they store their outdoor clothing.

The space requirements based on locker size are:

(i) 12″ × 22″ × 72″ [300mm. × 550mm. × 1,800mm.] (page 71). With this size of locker 4.8 sq. ft. (0.43m.²) is required per person and in addition 0.8 sq. ft. (0.07m.²) for a small individual locker.

The total area per person is thus 5.6 sq. ft. (0.50m.²). (Page 74, plan A.)

16.4.11.3 **Hanging Baskets**

a One hanging basket allocated to each member of staff on a permanent basis

Quantity

With this method one hanging basket must be allocated to each member of staff. This involves a usage of between 4 and 12 hours per day, for some 96-230 days per year.

The staff may change within the same area as the storage of the hanging basket, or the baskets may be handed over a counter for storage. No additional storage space is required. If the key of a lockable compartment is held by the employee, the security for its contents is their responsibility. If, however, the basket remains unlocked, security becomes the responsibility of the hospital authorities and additional supervisory staff will be required.

The space requirements based on hanging baskets situated behind a counter with separate storage and changing are:

(i) *Single tier*
9.37 sq. ft. (0.84m.^{2}) per person. (Page 75, plan A.)

(ii) *Two-tier*
7.0 sq. ft. (0.63m.^{2}) per person. (Page 76, plan B.)

b Hanging baskets allocated on a temporary 24-hour basis to individual members of staff

Quantity

With this method one hanging basket is allocated to each member of staff for their spell of duty. Thus the total number of hanging baskets required is 2/5ths of the total number of staff employed. A small personal locker is also required for each member of staff. These lockers must be allocated on a permanent basis. This method allows the use of each hanging basket for 16-18 hours per day throughout the year.

The staff will probably not change in the same area as they store their outdoor clothing.

The space requirements based on hanging baskets situated behind a counter with separate storage and changing are:

(i) *Single tier*
5.4 sq. ft. (0.48m.^{2}) per person (page 76, plan A), and in addition 0.8 sq. ft. (0.07m.^{2}) for a small individual locker per person. The total is thus 6.2 sq. ft. (0.55m.^{2}) per person.

(ii) *Two-tier*
3.75 sq. ft. (0.34m.^{2}) per person (page 77, plan A), and in addition 0.8 sq. ft. (0.07m.^{2}) for a small individual locker per person. The total is thus 4.55 sq. ft. (0.41m.^{2}) per person.

Circulation space

A further factor influencing the total area of changing accommodation is the amount of circulation space required. It may be noted that where hanging baskets are stored behind a counter, additional space will be necessary.

FLOW DIAGRAMS

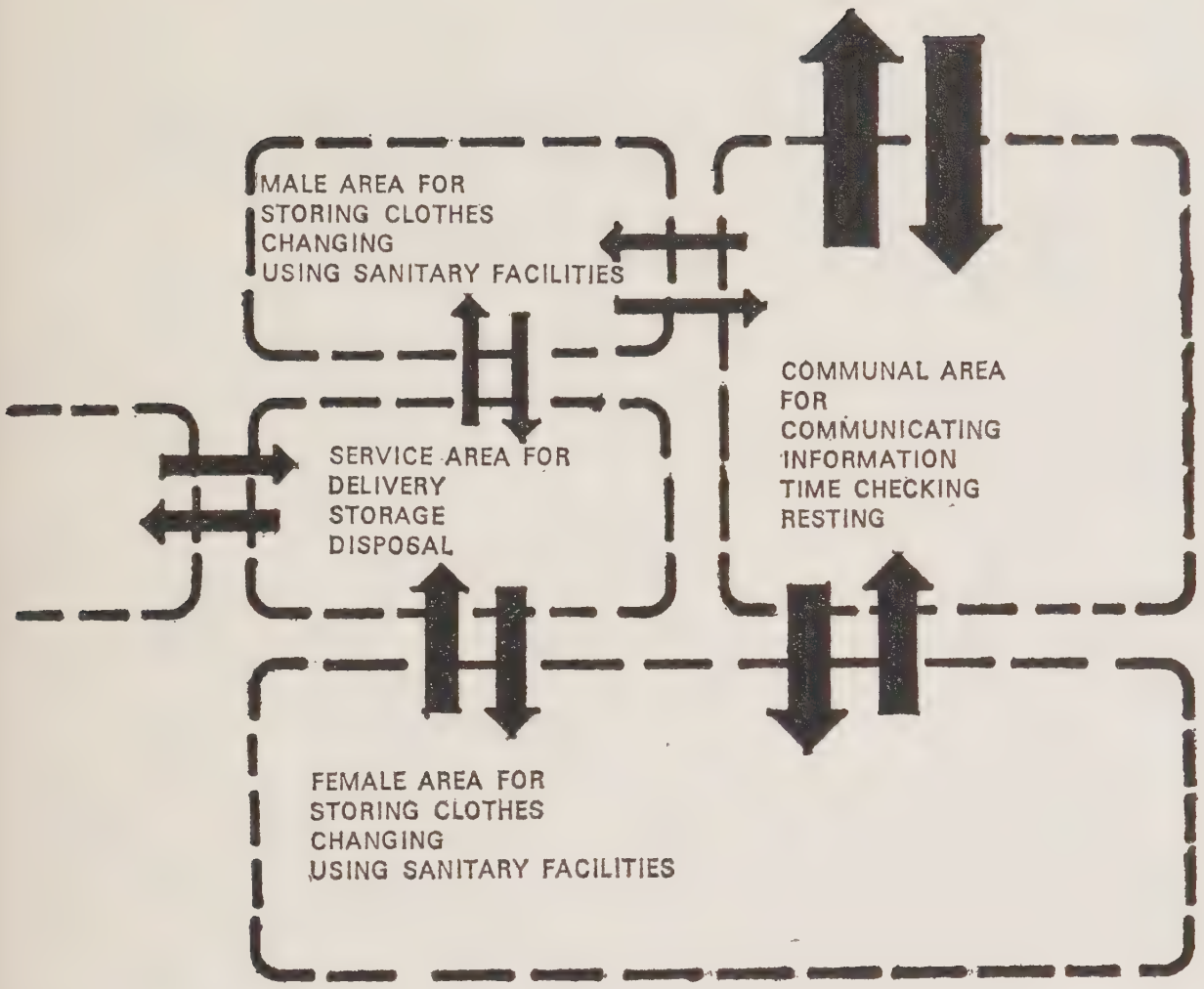
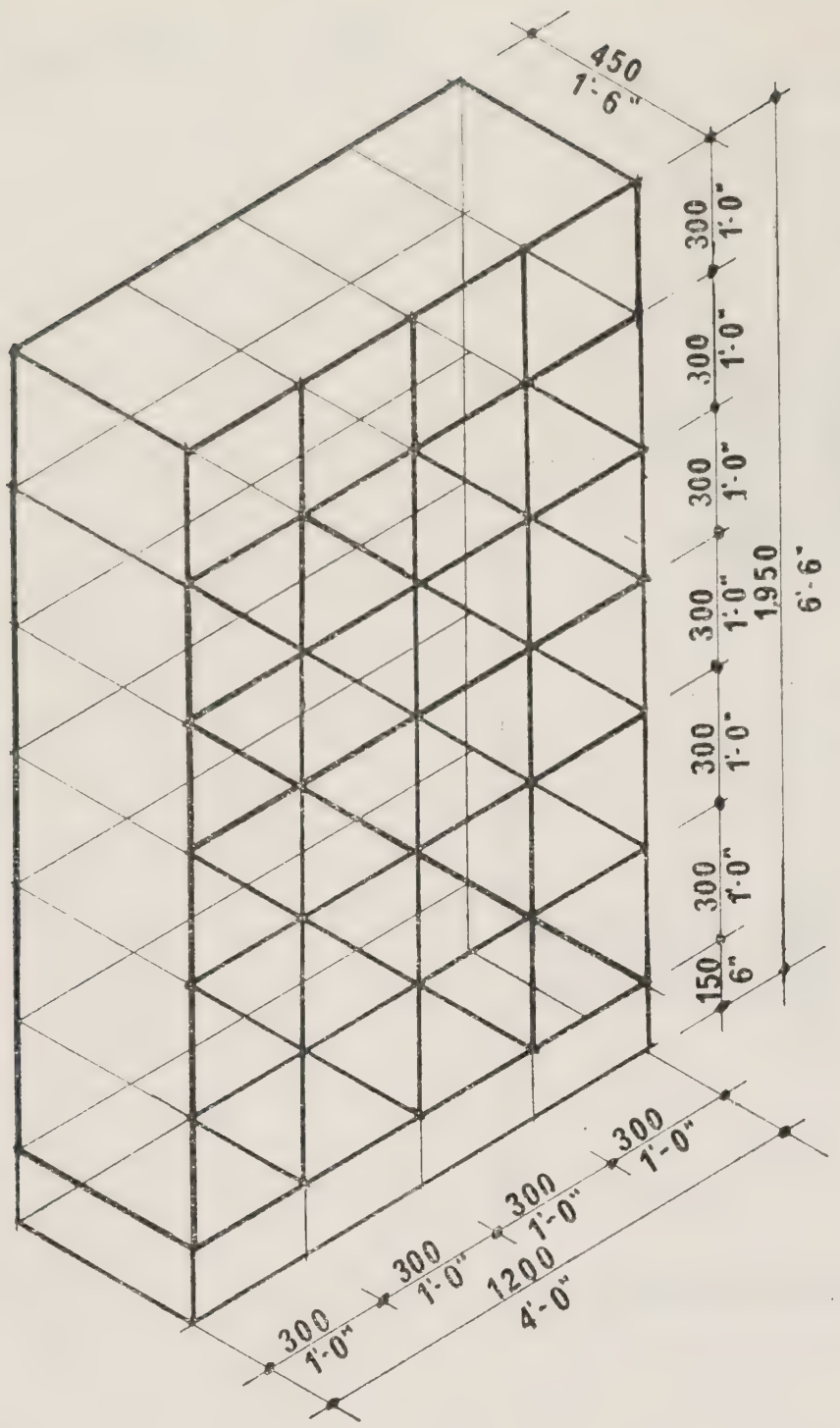


DIAGRAM FOR WHOLE AREA

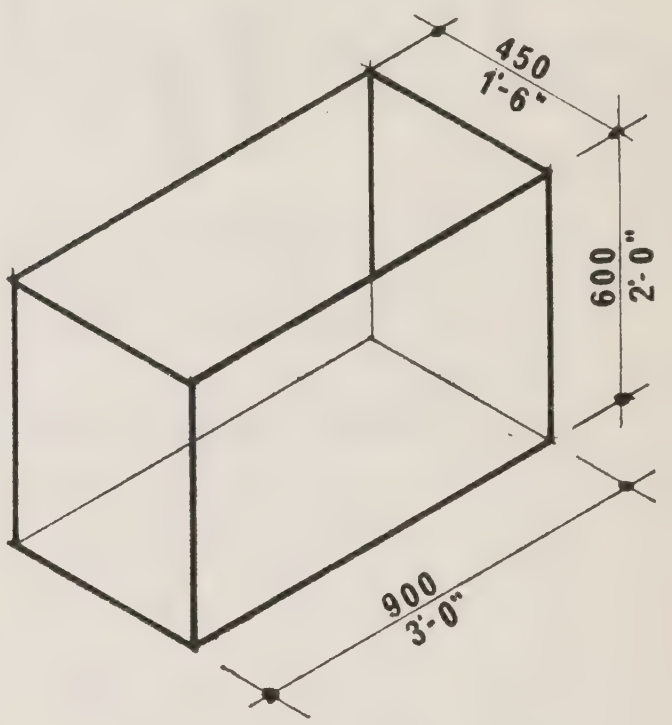
DIAGRAM FOR INDIVIDUAL USER

STORAGE OF HOSPITAL UNIFORM

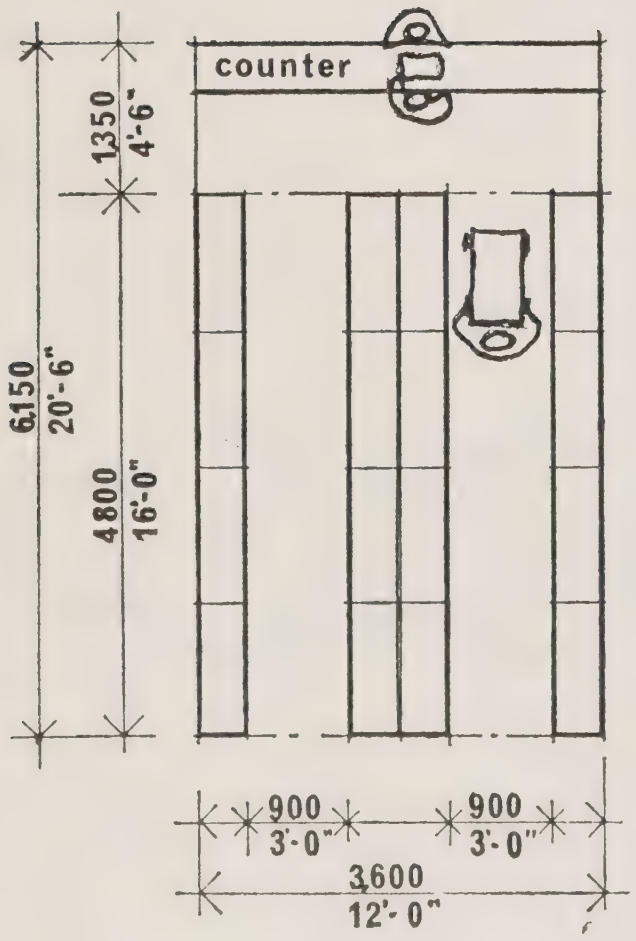


SUGGESTED STORAGE FOR NURSES' "ONE-PIECE" UNIFORM

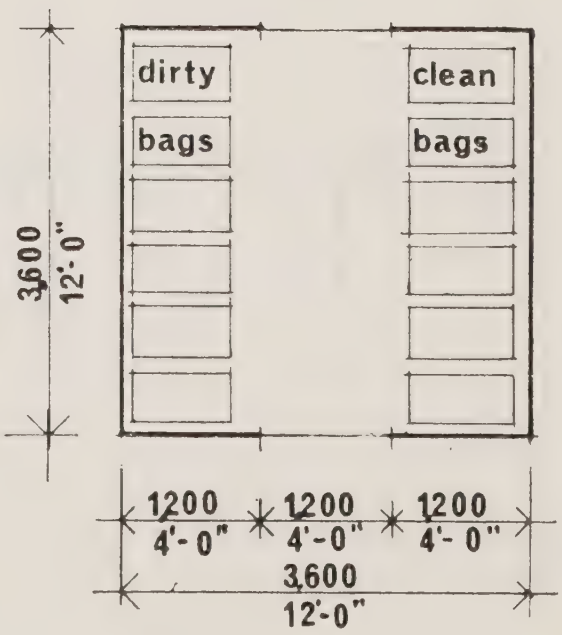
Each division will take
eight to ten uniforms



DISPOSAL BAG FOR
80-100 UNIFORMS



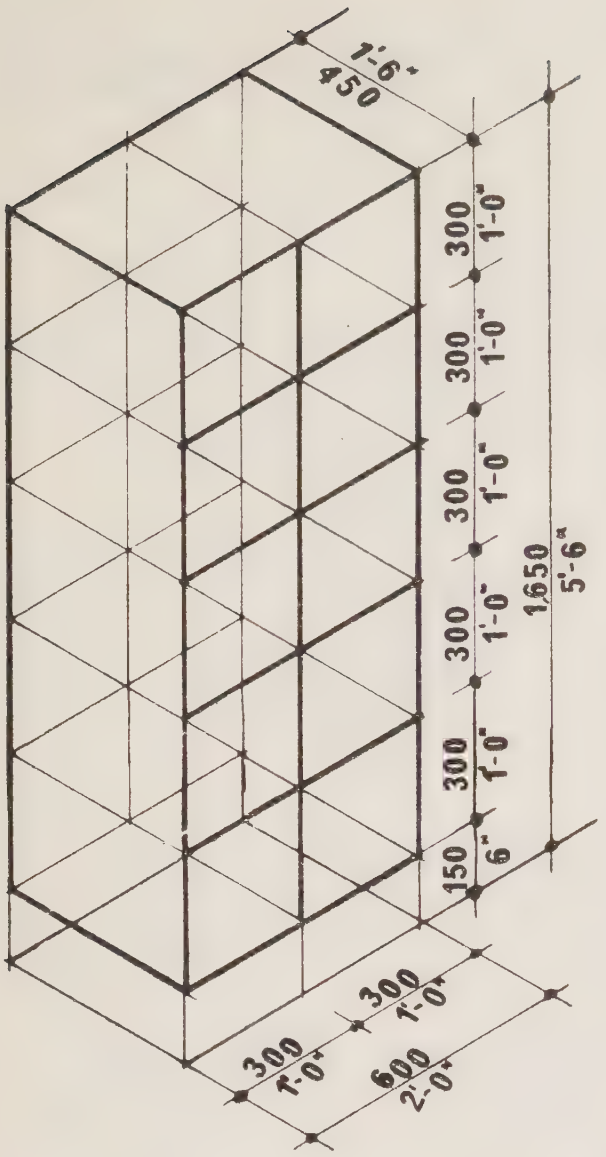
BULK STORAGE FOR 384 SETS
OF CLEAN UNIFORM

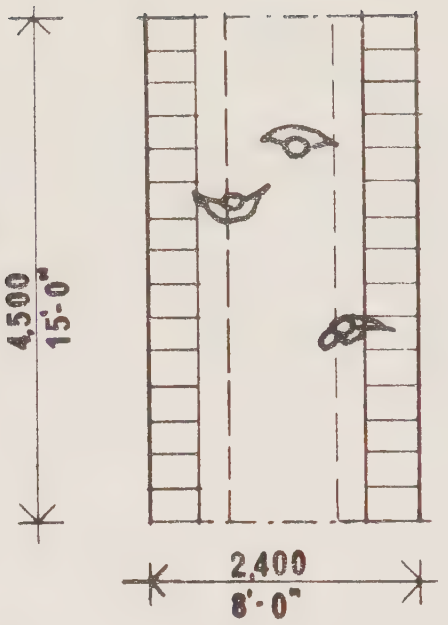


Bags stacked
two high

BULK STORAGE FOR SUPPLY AND
DISPOSAL BAGS FROM LAUNDRY

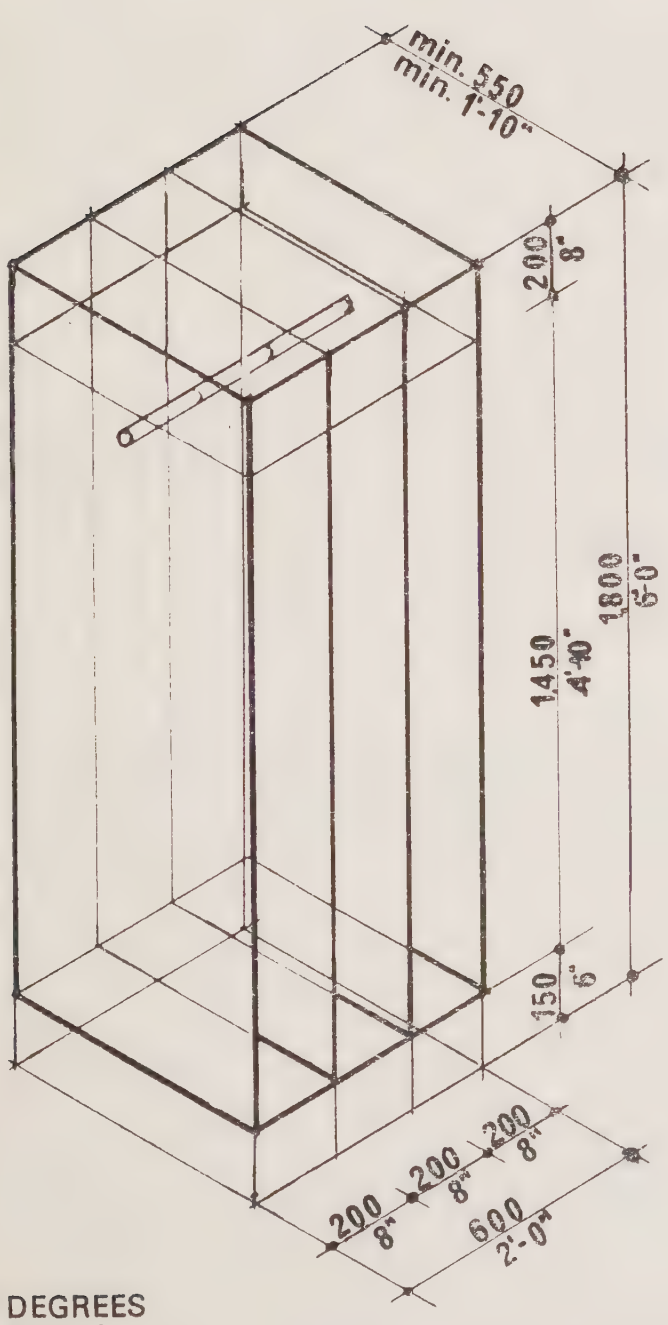
10-12 disposal bags will cater for
approximately 300 staff per week



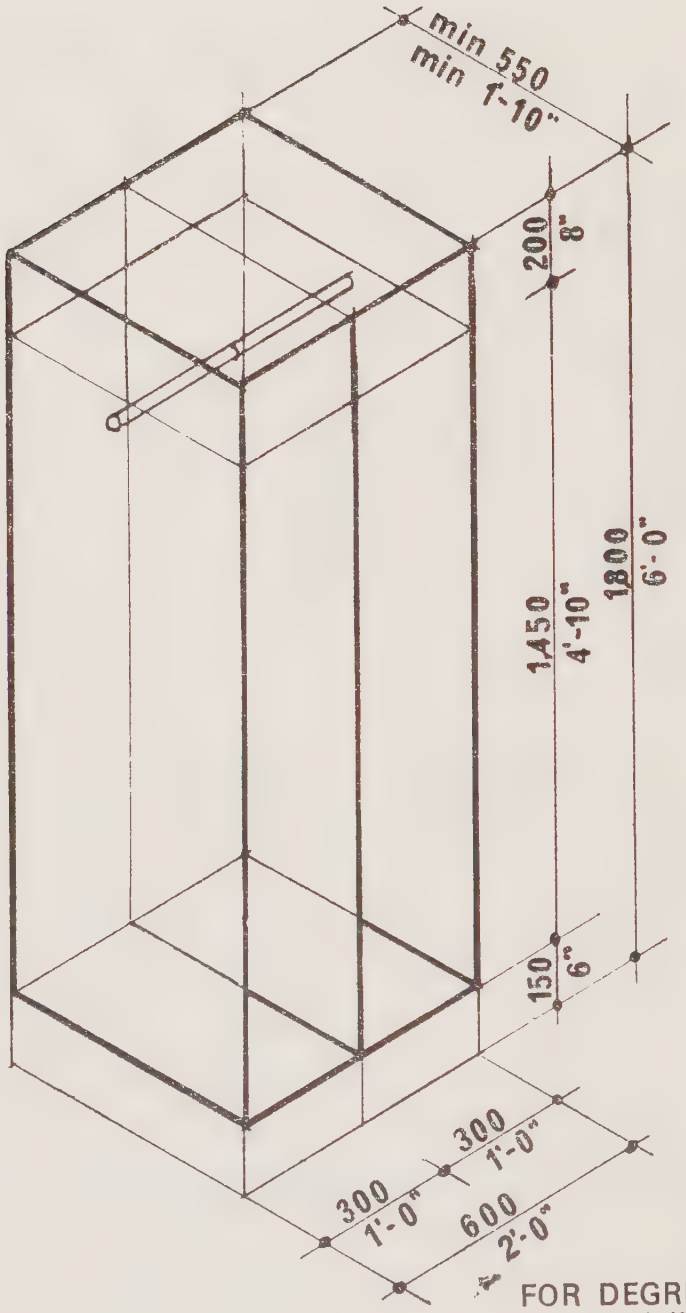


LAYOUT FOR 150 LOCKERS

PERSONAL LOCKERS



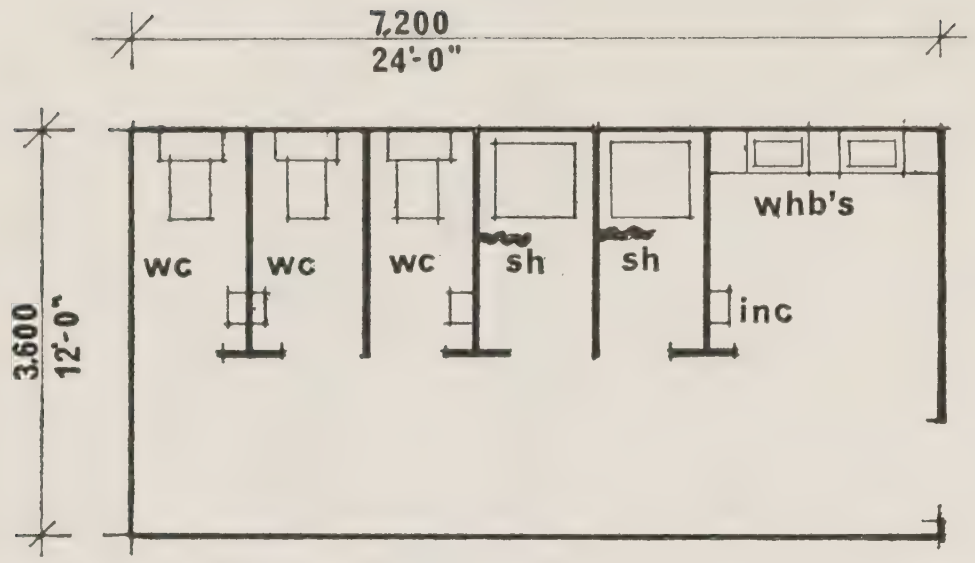
FOR DEGREES
III and IV



FOR DEGREES
I and II

CLOTHES LOCKERS

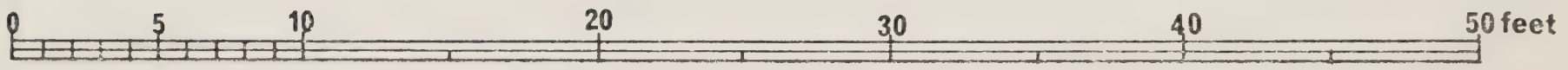
SANITARY FACILITIES



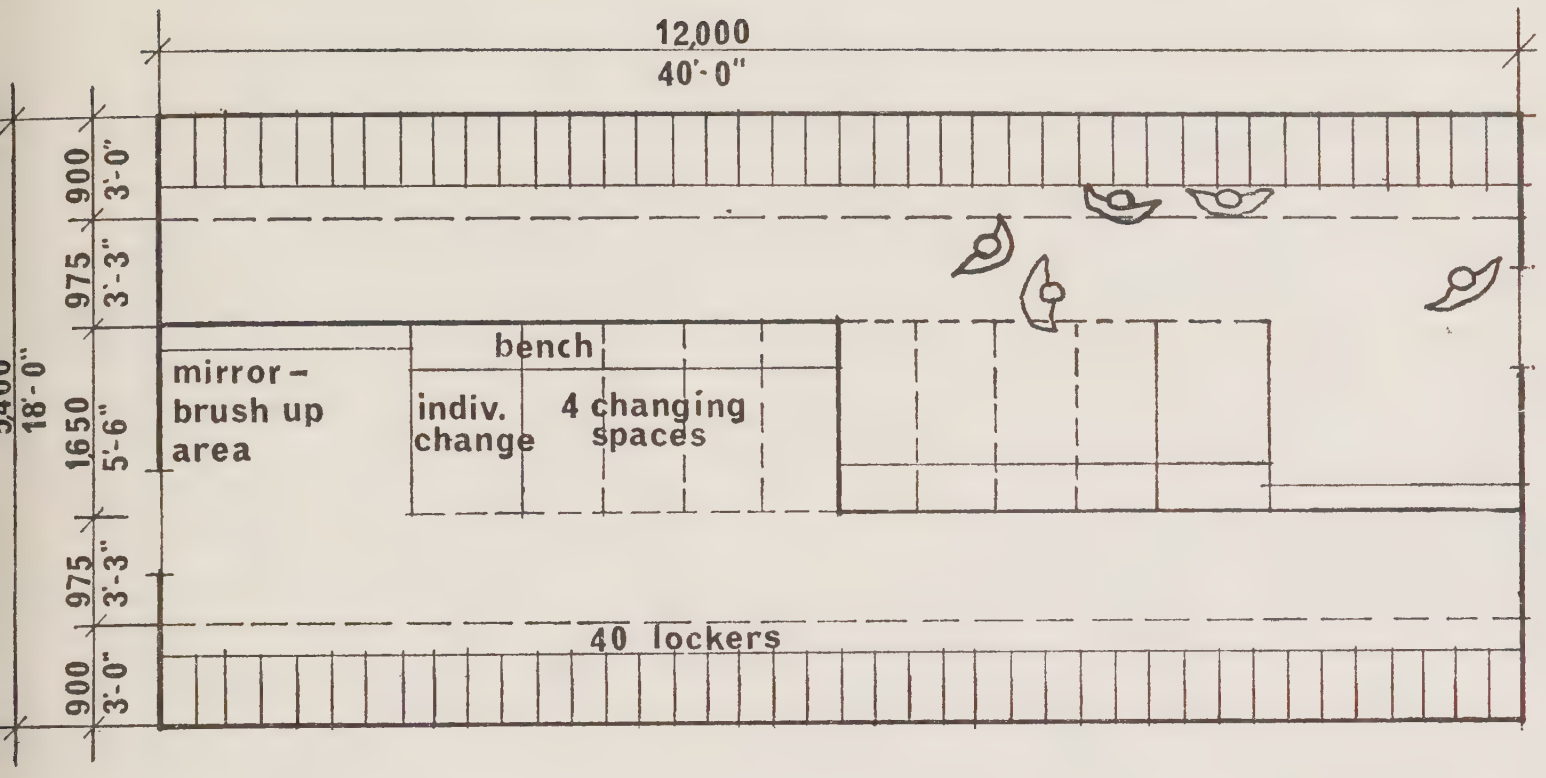
Peak use for 36 staff

Female staff
3 W.C.s with H.B.s
2 Separate H.B.s
2 Showers
1 Incinerator

Male staff
2 W.C.s with H.B.s
3 Urinals
5 Separate H.B.s
2 Showers



PERMANENT ALLOCATION OF LOCKERS



DEGREE II

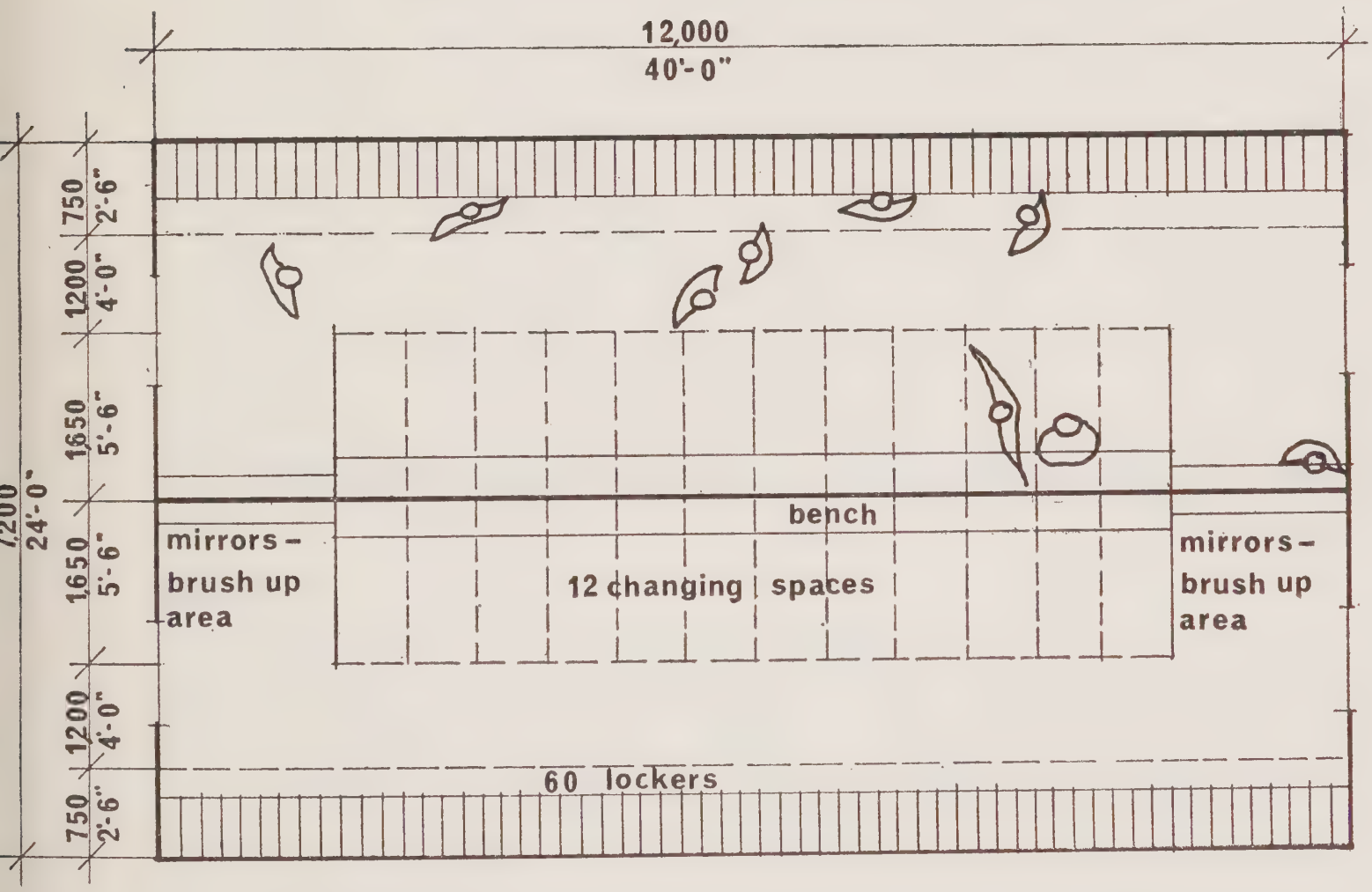
Clothes storage
for 80 persons

Changing : Storage
1 : 8

Area 64.80 m.²
(720 sq. ft.)

Area per person
0.81 m.² (9.00 sq. ft.)

A. LOCKER SIZE 12″ × 22″ × 72″ (300 × 550 × 1,800)



DEGREES III and IV

Clothes storage
for 120 persons

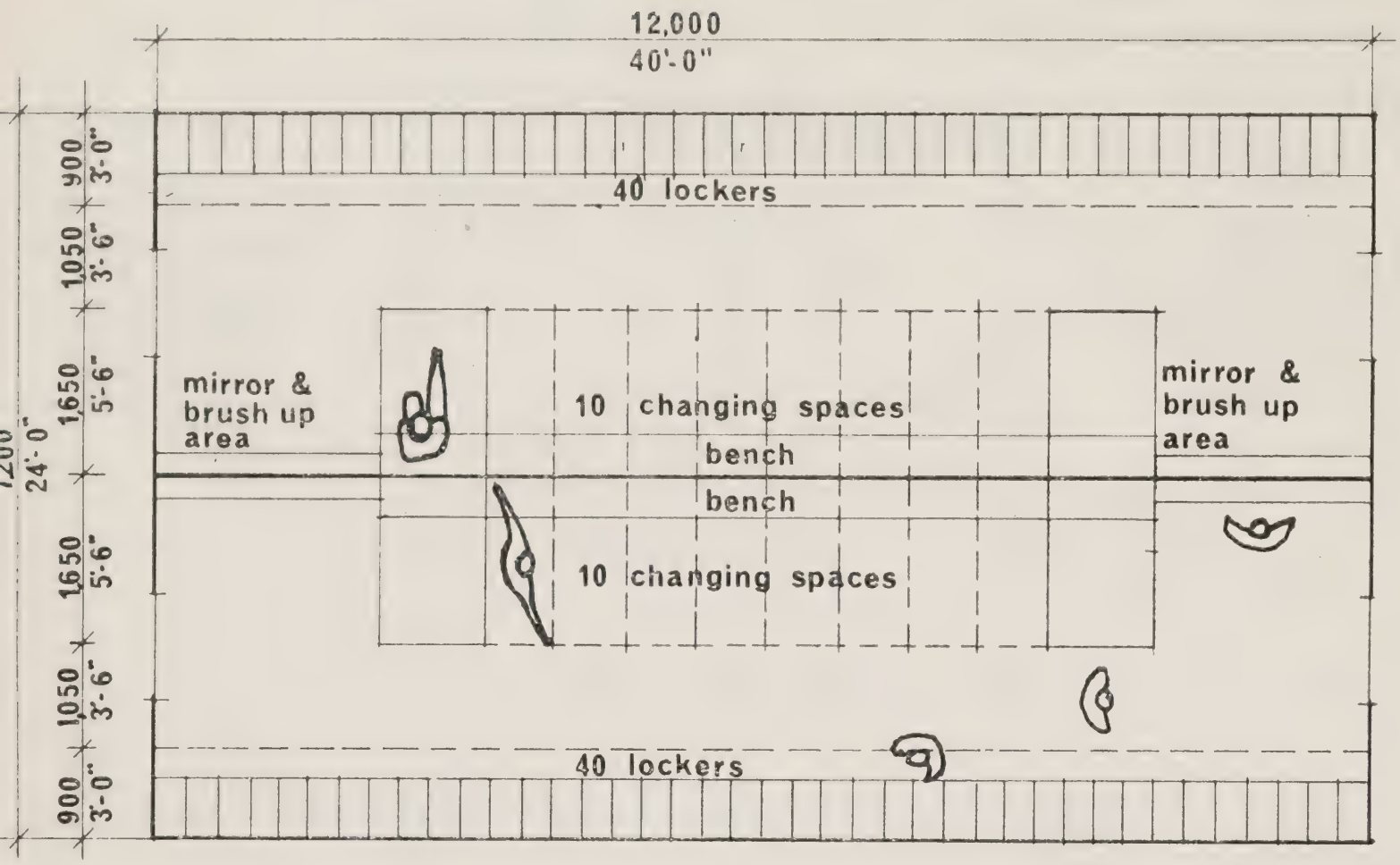
Changing : Storage
1 : 5

Area 86.40 m.²
(960 sq. ft.)

Area per person
0.72 m.² (8.00 sq. ft.)

B. LOCKER SIZE 8″ × 22″ × 72″ (200 × 550 × 1,800)

TEMPORARY ALLOCATION OF LOCKERS



DEGREE II

Clothes storage for 80 persons

Changing : Storage
1 : 4

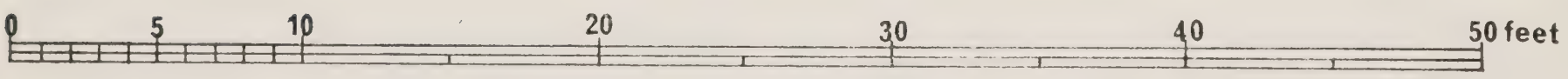
Area 86.40 m.²
(960 sq. ft.)

Area per person (ex perso lockers)
0.43 m.²
(4.80 sq. ft.)

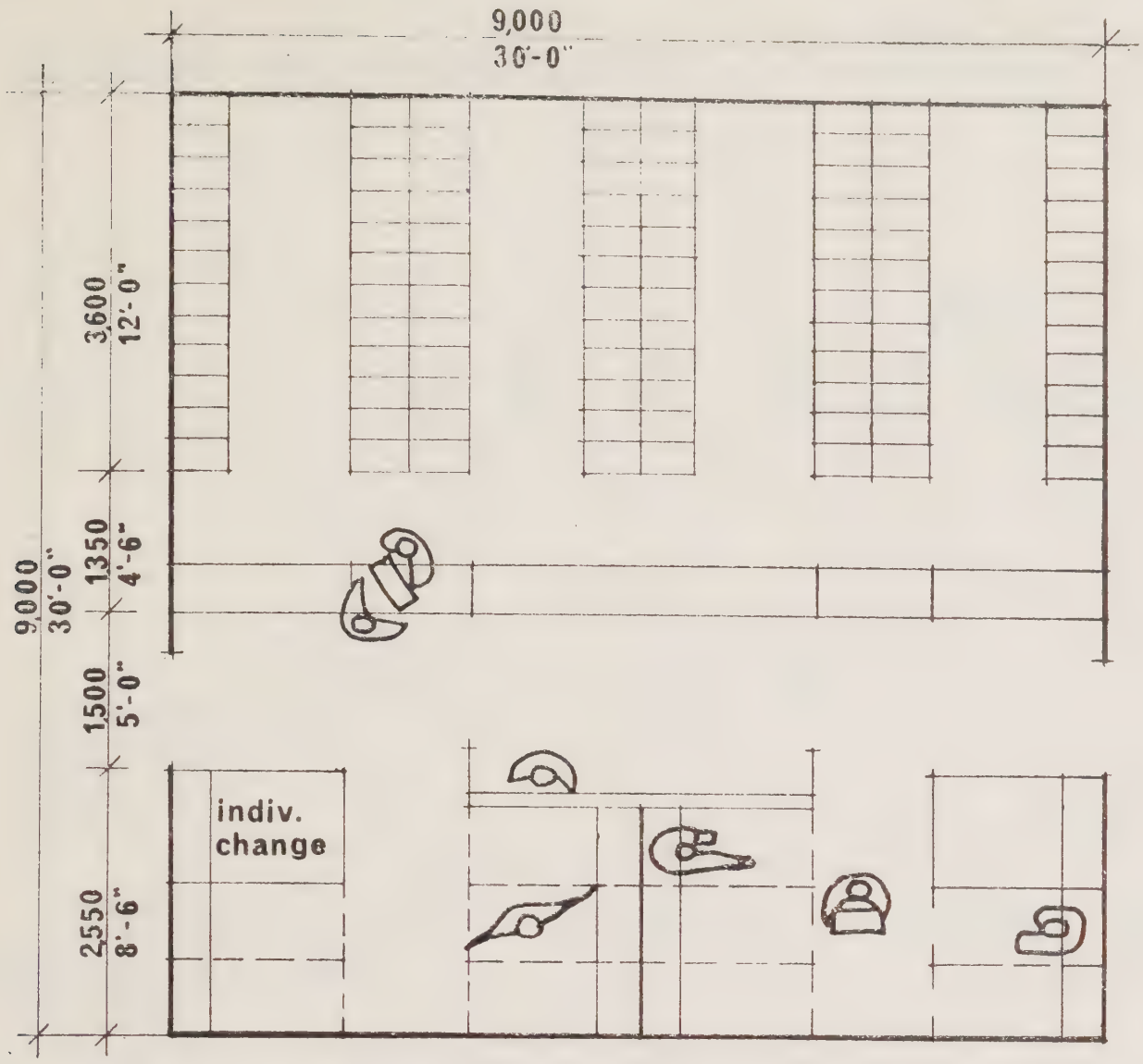
Add for personal lockers
.07 m.² (0.8 sq. ft.)

Total area per person
0.50 m.² (5.6 sq. ft.)

A. LOCKER SIZE 12″ × 22″ × 72″ (300 × 550 × 1,800)



PERMANENT ALLOCATION OF HANGING BASKETS



A. SINGLE-TIER HANGING BASKETS

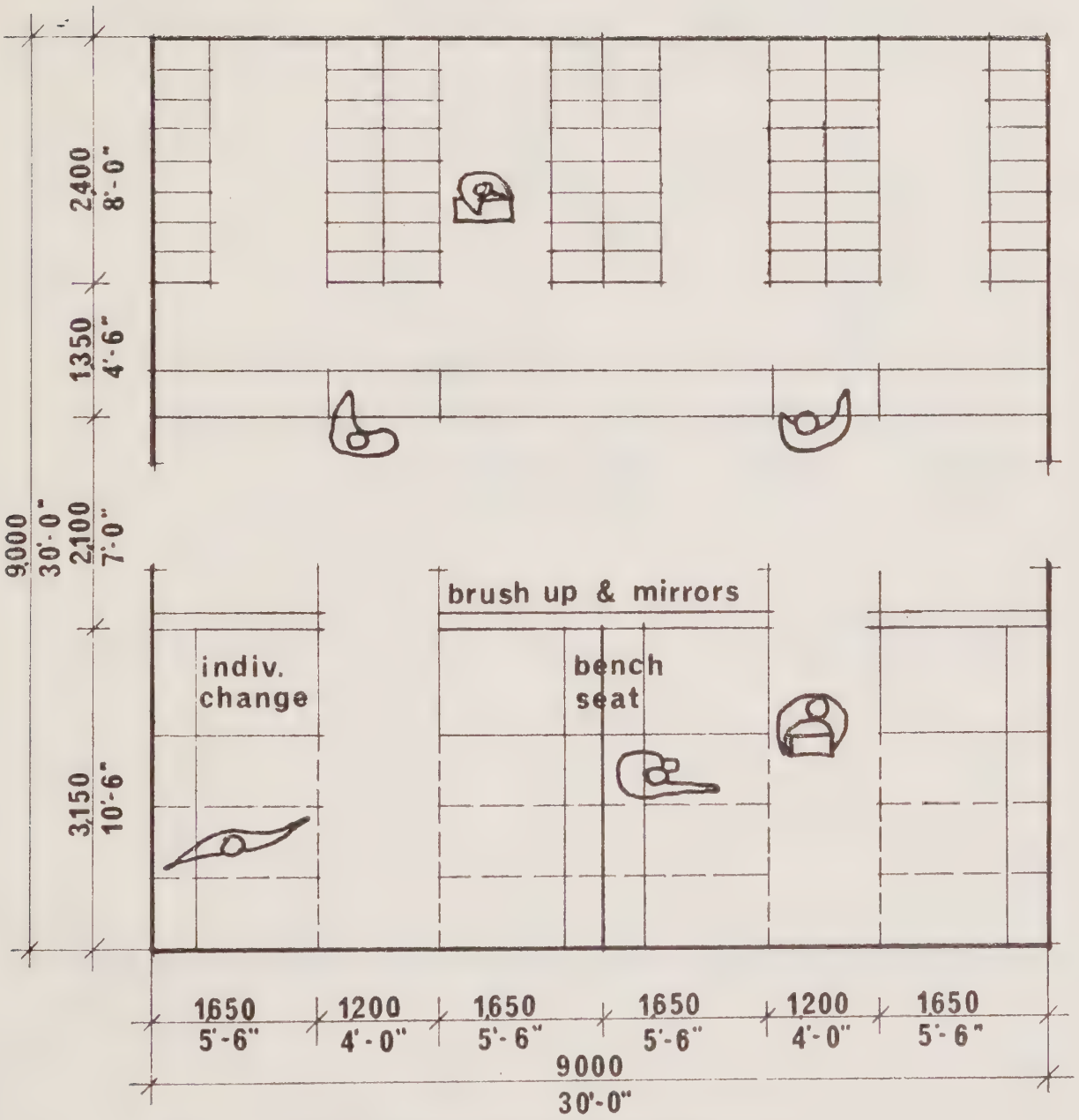
DEGREES II, III and IV

Clothes storage for
96 persons

Changing : Storage
1 : 8

Area 81 m.²
(900 sq. ft.)

Area per person
0.84 m.²
(9.37 sq. ft.)



B. TWO-TIER HANGING BASKETS

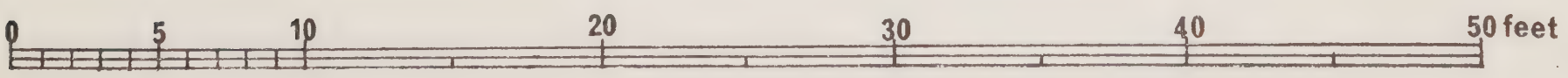
DEGREES II, III and IV

Clothes storage for
128 persons

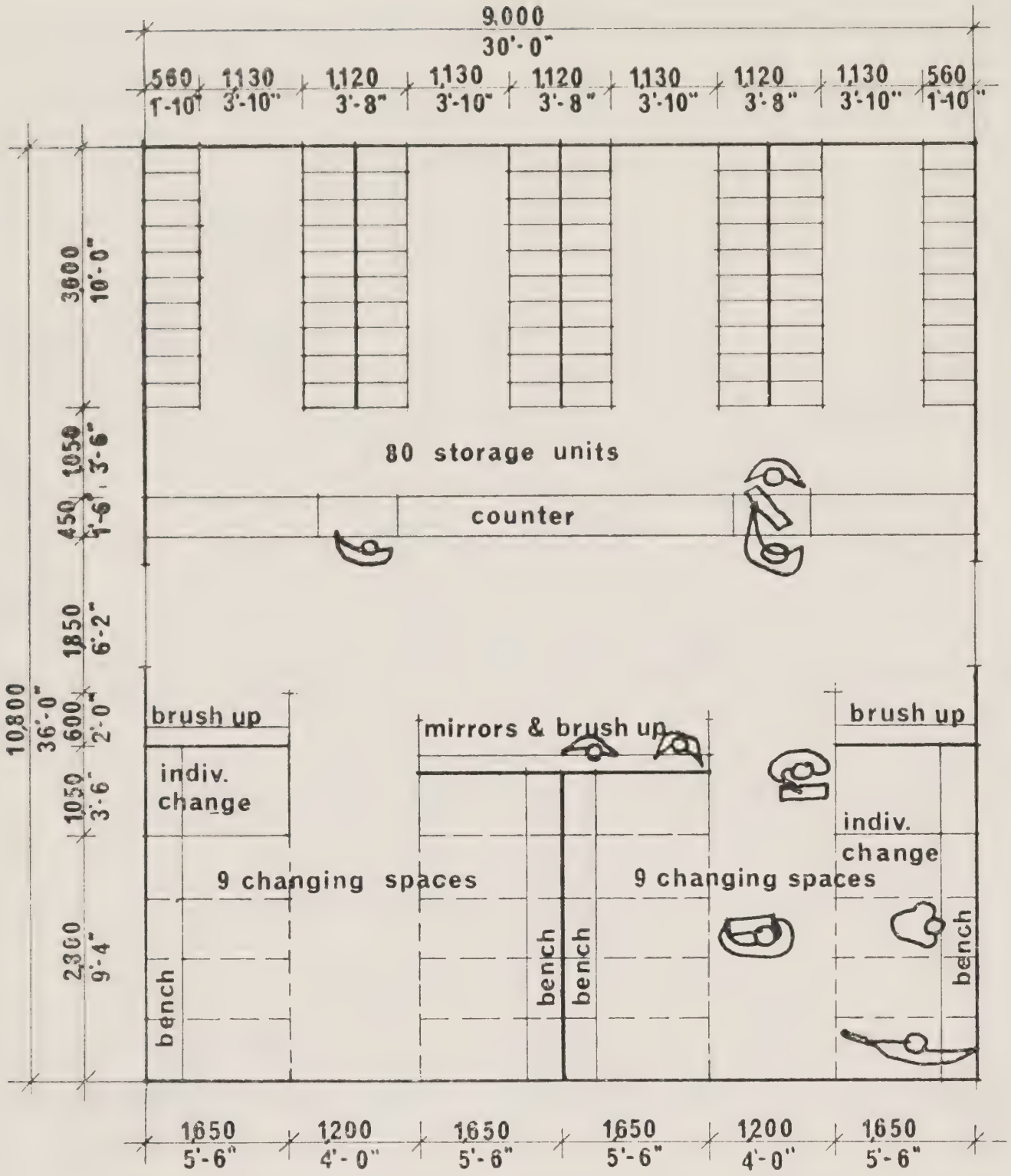
Changing : Storage
1 : 8

Area 81 m.²
(900 sq. ft.)

Area per person
0.63 m.²
(7.0 sq. ft.)



TEMPORARY ALLOCATION OF HANGING BASKETS



DEGREE II

Clothes storage
for 80 persons

Changing : Storage
1 : 4

Area 97.20 m.²
(1,080 sq. ft.)

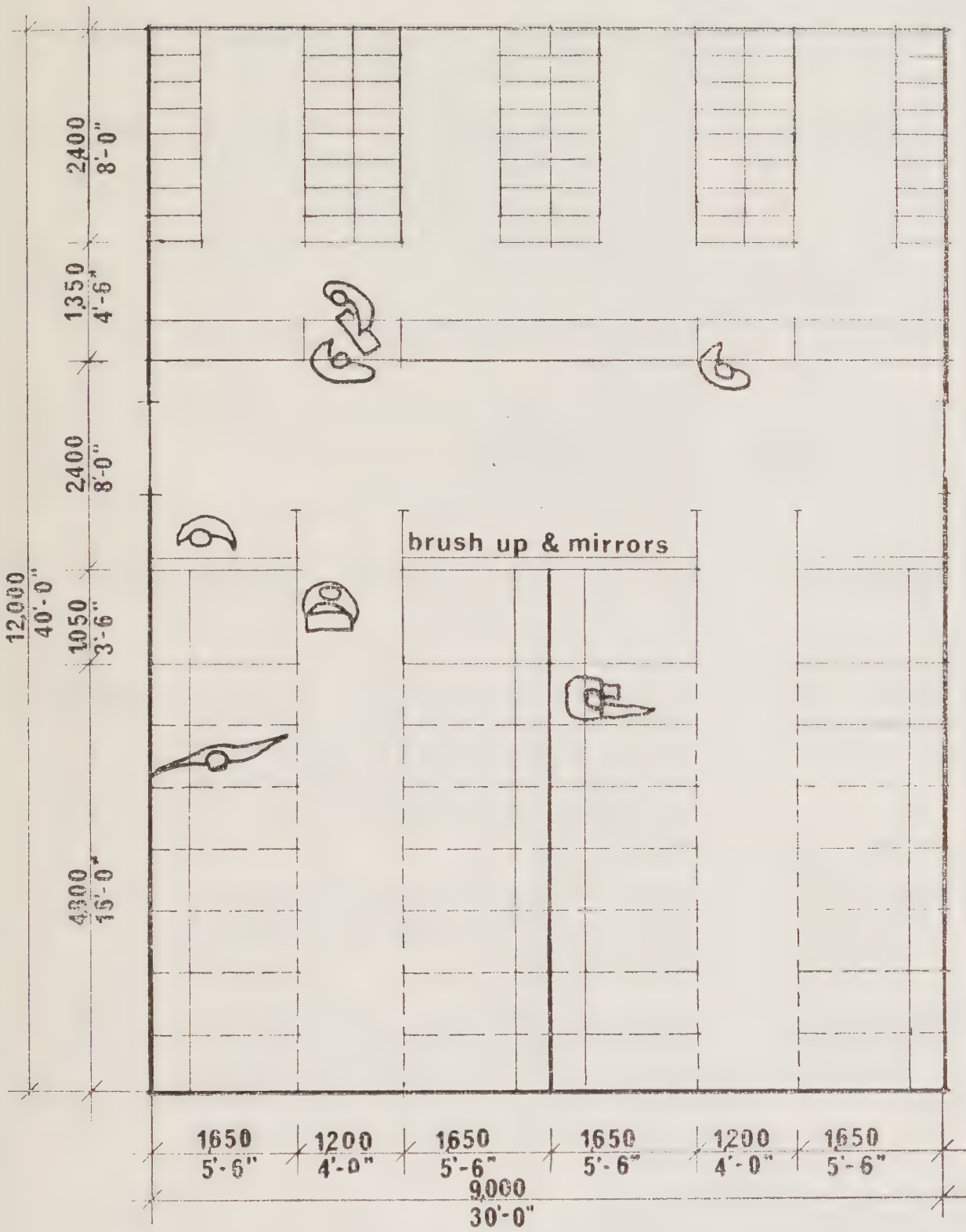
Area per person (ex personal lockers)
0.48 m.²
(5.4 sq. ft.)

Add for personal locker
0.07 m.²
(0.8 sq. ft.)

Total area per person
0.55 m.² (6.2 sq. ft.)

SINGLE-TIER HANGING BASKETS

TEMPORARY ALLOCATION OF HANGING BASKETS



DEGREE II

Clothes storage
for 128 persons

Changing : Storage
1 : 4

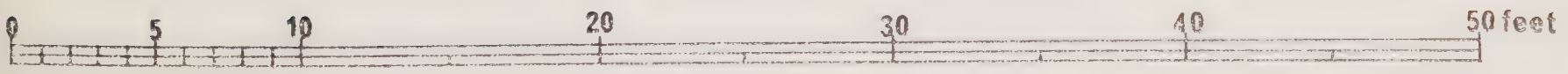
Area 108.00 m.²
(1,200 sq. ft.)

Area per person (ex personal lockers)
0.34 m.²
(3.75 sq. ft.)

Add for personal locker
0.07 m.²
(0.8 sq. ft.)

Total area per person
0.41 m.² (4.55 sq. ft.)

TWO-TIER HANGING BASKETS



17 SUMMARY OF ASPECTS AFFECTING PLANNING

	Aspect	*Comment*	*Paragraph No.*
1	Definition of non-resident staff and the categories involved.	While nursing and domestic staff form the majority, several other categories must be considered. The policy on protective clothing should be reviewed.	16.1.a
2	Projection of staff estimates.	Consider effects of local development plans. Note relevant national trends.	16.1.b
3	" Effective " staff and actual staff.	Estimates of " effective " staff may be misleading. It takes approximately five full-time nursing staff to provide a 24-hour service throughout the year. This number increases if part-time staff are employed.	16.1.b
4	Peak use.	Times at which staff overlap should be identified.	16.1.c
5	Location and social conditions.	Transport arrangements and their probable development. Demand for part-time work. Competing claims for employment.	16.1.b
6	Degree of centralisation or de-centralisation.	For other than specialised changing, decisions will depend on the layout and distances involved.	16.2.a
7	Usage of accommodation.	Many part-time staff will only do a fraction of the 230 days per annum worked by full-time staff; only two-fifths of the staff covering a 24-hour period and requiring changing and storage facilities will use it at any one time.	Appendix A
8	Degree of changing.	Decide the degree of changing for each grade of staff. Four degrees of changing may be recognised.	16.2.b
9	Storage for personal items.	Some items are stored throughout the employee's stay at the hospital, others during hours of duty only. Decide whether these can be contained in one large unit, or if additional storage is required.	16.4.3 16.4.4
10	Supply, storage, distribution and disposal of hospital clothing.	Salient points are: Frequency with which staff are required to change; Frequency of laundry deliveries; Issue of uniform on a personal basis or in stock sizes; central storage, issue and disposal of hospital uniform.	16.2.c
11	Method of storage and allocation.	Critical decisions are whether to use full-length lockers or hanging baskets, and how these will be allocated.	16.4.10
12	Degree of security.	The extent of responsibility towards employees' personal belongings and uniform should be decided.	16.3.a
13	Standard of privacy.	The level of privacy depends on the degree of changing involved.	16.3.b

	Aspect	*Comment*	*Paragraph No.*
14	Standards of heating, lighting and ventilation.	Heating should suit the degree of changing. Lighting should be diffuse but increased near mirrors. Ventilation should be adequate to dry wet clothes, and keep clothes and shoes well aired.	14.3.c
15	Standard ancillary accommodation.	Provision of w.c.s, washhand basins and showers should cover peak use.	16.3.d

Space required by each employee for storing and changing clothes

These estimates are based on the plans in the text. Only immediate circulation areas are included. Entrances and main corridors will vary according to location and the number of staff involved.

(1) **Total area allocated per person**

1 **Lockers**

a *Allocated on a permanent basis* (*changing and storage combined*).

(i) Size: 12″ × 22″ × 72″ (300mm. × 550mm. × 1,800mm.) 9.0 sq. ft. (0.81m.²)

(ii) 8″ × 22″ × 72″ (200mm. × 550mm. × 1,800mm.) 8.0 sq. ft. (0.72m.²)

b *Allocated on a temporary basis* (*changing and storage combined*).

(i) Size: 12″ × 22″ × 72″ (300mm. × 550mm. × 1,800mm.) 4.80 sq. ft. (0.43m.²)

With small permanently allocated lockers adjacent. 5.60 sq. ft. (0.50m.²)

2 **Hanging baskets**

a *Allocated on a permanent basis.* (*Storage of baskets behind a counter—changing separate or adjacent*).

(i) Single-tier hanging baskets 9.37 sq. ft. (0.84m.²)

(ii) Two-tier hanging baskets 7.0 sq. ft. (0.63m.²)

b *Allocated on a temporary basis.* (*Storage of baskets behind a counter—changing separate or adjacent*).

(i) Single-tier hanging baskets 5.40 sq. ft. (0.48m.²)
With small permanently allocated lockers adjacent. 6.20 sq. ft. (0.55m.²)

(ii) Two-tier hanging baskets 3.75 sq. ft. (0.34m.²)
With small permanently allocated lockers adjacent. 4.55 sq. ft. (0.41m.²)

(2) **Ancillary accommodation provided on peak-use figures**

a *Sanitary facilities*

(Peak use by 36 staff)

Female staff
3 w.c.s with w.h.b's.
2 separate w.h.b's.
2 showers
1 incinerator 288.00 sq. ft. (25.92m.²)

Male staff
2 w.c.s with w.h.b's.
3 urinals
5 separate w.h.b's.
2 showers 288.00 sq. ft. (25.92m.²)

b *Waiting area*

(Peak use by 20 staff) Informal arrangement of comfortable seating and low tables. 250.00 sq. ft. (23.23m.²)

APPENDICES

APPENDIX A

Nursing Staff Estimates

The following is an estimate of the number of nursing staff available throughout a 24-hour period, taking account of the hours worked per week and the time lost through sickness and holidays. It indicates the pattern which evolves when different proportions of full-time to part-time staff are employed. The working week for full-time staff has been taken as 42 hours, and 35 hours for part-time staff; it is realised that the latter may be above the average.

In one year there are 8,760 hours to be covered. Full-time staff at 42 hours per week are absent for approximately six weeks per year (annual and public holidays 4 weeks, sick leave 2 weeks). They are therefore available for 1,932 hours per year (46 weeks $\times$ 42 hours).

Part-time staff working for 35 hours per week, and having the same period of absence as the full-time staff, are therefore available for 1,610 hours per year (46 weeks $\times$ 35 hours).

Examples

1 *Full-time staff only*

100 staff
The hours worked by 100 full-time staff in one year $=193,200$
The average number of staff on duty at any one time $=193,200 \div 8,760$
$=22.0$

i.e., 22% *of all staff on duty at any one time*

2 *One full-time to two part-time staff* (1 : 2)

300 staff
100 full-time
200 part-time
The hours worked by 100 full-time staff in one year $=193,200$
The hours worked by 200 part-time staff in one year $=322,000$
The total hours worked by all staff $=515,200$
The average number of staff at any one time $=515,200 \div 8,760$
$=58.8$

i.e., 19.6% *of all staff on duty at any one time*

3 *One full-time to three part-time* (1 : 3)

400 staff
100 full-time
300 part-time
The hours worked by 100 full-time staff in one year $=193,200$
The hours worked by 300 part-time staff in one year $=483,000$
The total hours worked by all staff $=676,200$
The average number of staff on at any one time $=676,200 \div 8,760$
$=77.2$

i.e., 19.3% *of all staff on duty at any one time*

4 *One full-time to four part-time staff* (1 : 4)

500 staff
100 full-time
400 part-time
The hours worked by 100 full-time staff in one year $=193,200$
The hours worked by 400 part-time staff in one year $=644,000$
The total hours worked by all staff $=837,200$
The average number of staff on at any one time $=837,200 \div 8,760$
$=95.57$

i.e., 19.1% *of all staff on duty at any one time*

5 *One full-time to* 10 *part-time staff* (1 : 10)

1,100 staff
100 full-time
1,000 part-time

Hours worked by 100 full-time staff in one year	=193,200
Hours worked by 1,000 part-time staff in one year	=1,610,000
Total hours worked by all staff	=1,803,200
The average number of staff on duty at any one time	=1,803,200÷8,760
	=205.8

i.e., 18.7% *of all staff on duty at any one time*

As the proportion of part-time staff to full-time staff increases there is a tendency for the percentage of total staff on duty at any one time to decrease. Yet in all instances the average estimates of staff on duty at any one time is approximately 1/5th of the total staff employed.

In summary

1	Full-time staff only	: 22% of total staff on duty at one time
2	Ratio* 1 : 1	: 20.2% of total staff on duty at one time
3	Ratio* 1 : 2	: 19.6% of total staff on duty at one time
4	Ratio* 1 : 3	: 19.3% of total staff on duty at one time
5	Ratio* 1 : 4	: 19.1% of total staff on duty at one time
6	Ratio* 1 : 10	: 18.7% of total staff on duty at one time

If the hours worked by part-time staff are reduced, e.g., to 30 hours per week, the percentages of staff on duty are slightly lowered.

* Full-time to part-time staff.

NON-RESIDENT CHANGING ACCOMMODATION

PLANNING PROPOSALS FOR FIVE DISTRICT GENERAL HOSPITALS

Hospital	Beds	Estimate P.T. Staff	Total No. Lockers	Area in sq. ft.	Area/ person* in sq. ft.	Total area for SH., WC., WHB, in sq. ft.	Area/ person including toilet facilities	Comments
A	576	None	1,318	6,700	5.0	1,527	6.2	All staff central changing.
B	418	None	386 (N.125)	2,500	6.5	780	8.5	Additional changing for Pathology Department but undecided for domestic, kitchen, and portering staff.
C	641	None	1,016	8,140	8.0	1,000	9.0	Additional accommodation provided for Service Department (engineers, gardeners, etc.). 50 lockers+toilets in 600 sq. ft., i.e. 12 sq. ft./person.
D	502	None	911	5,712	6.2	1,350	7.7	Separate changing for Laboratory Department. 30 lockers+toilets (M & F) in 500 sq. ft., i.e. 16.6 sq. ft./ person.
E	700	None	1,024	7,361	7.2	1,760	8.9	Additional accommodation provided for workshop staff, Lavatory/Locker Room. 20 lockers in 250 sq. ft., i.e. 12.5 sq. ft./person. Laboratory service: changing and seating in 540 sq. ft. for 36 technicians, i.e. approximately 10 sq. ft./person.

* Assumes 1 locker per person.

BIBLIOGRAPHY

1 AULD, MARGARET G. An investigation into the recruitment and integration of part-time nursing staff in hospitals. *International journal of nursing studies*, 1967, May, **4**, 119-169.

2 BARNETT, T. Staff centre, Benenden Chest Hospital. *British hospital journal*, 1965, August 20, **75**, 1591.

3 BILDT, H. *and others*. Hälso-och sjukvårdens personalproblem. [Staff problems in the health centres.] *In: Svenska sjukhusföreningens ärsbok*, 1964, pp. 49-101. Linköping, Svenska sjukhusförening, 1965. *Hospital abstracts*, 1967, 596.

4 Cloakrooms, fixtures and equipment: general. *Architects' journal*, 1963, July 17, **138**, Information sheet 1209.

5 CRIGHTON, ANNE *and* CRAWFORD, MARION P. *The legacy of Nightingale: a consideration of some of the problems of nursing staff in Welsh hospitals today*. [Cardiff] Welsh Hospital Board, 1966.

6 CRIGHTON, ANNE *and* HARDIE, ROBIN. *The need for manpower planning in the hospital service*. [Cardiff] Welsh Hospital Board [1967].

7 CULLINAN, JEAN. Non-resident changing accommodation at King's College Hospital. *Nursing times*, 1966, March 4, **62**, 291-293.

8 DEARDEN, R. W. Nurse staffing structures: a compendium. *Hospital*, London, 1967, **63**, February, 60-61; March, 95-98; April, 133-134.

9 DONALD, B. L. *Manpower for hospitals: a study of problems in some West European countries*. London, I.H.A., 1966.

10 *Factories act, 1961*. London, H.M.S.O., 1961.

11 GENERAL NURSING COUNCIL FOR ENGLAND AND WALES. *Student nurse wastage*. London, The Council, 1966.

12 GOAD, M. W. Work study in nursing at Westminster Hospital. *Nursing times*, 1962, January 26, **58**, 109-12.

13 JEFFORD, R., *editor*. *Principles of hospital planning*. London, Pitman, 1967.

14 HOSPITAL CENTRE. *Changing accommodation for non-resident staff* [*interim report*]. London, The Centre, 1965.

15 HOSPITAL CENTRE. Changing accommodation for non-resident staff: an investigation. *Hospital management, planning and equipment*, 1965, October, **28**, 774-780.

16 HOSPITAL CENTRE. *Changing accommodation for nurses* [*report of a survey undertaken in 1959*]. London, The Centre, 1963.

17 HOSPITAL CENTRE. *Non-resident staff changing accommodation, St Stephen's Hospital, Fulham: report of visit*. 1964. (Unpublished.)

18 HOSPITAL CENTRE. *Non-resident staff changing accommodation, Hammersmith Hospital: report of visits*. 1964. (Unpublished.)

19 HOSPITAL CENTRE. *Non-resident staff changing accommodation, Wanstead Hospital: report of visit*. 1964. (Unpublished.)

20 IMPERIAL CHEMICAL INDUSTRIES LTD. *Amenities standards in Imperial Chemical Industries Limited: report of I.C.I. amenities committee*. London, I.C.I., 1946 [and amendments 1957; 1962].

21 INDUSTRIAL SOCIETY. *Lavatories and washrooms in factories and offices*. London, The Society, 1966.

22 KING EDWARD'S HOSPITAL FUND FOR LONDON. *Memorandum on nursing establishments: report of a joint working party*. [*Chairman: P. H. Constable*.] London, The Fund, 1966.

23 KNIGHT, J. E. Recruitment and wastage of nursing staff. *Nursing times*, 1965, **61**, November 5, 1502-3, November 12, 1540-42, November 19, 1572-74.

24 LEEDS REGIONAL HOSPITAL BOARD. *Work measurement as a basis for calculating nursing establishments*. Leeds, The Board, 1963.

25 MANCHESTER REGIONAL HOSPITAL BOARD. *Report of the working party on standards of catering staff in hospitals*. Manchester, The Board, 1962.

26 MANCHESTER REGIONAL HOSPITAL BOARD. *Report of the working party on standards of domestic staff in hospitals.* [*Chairman: E. Bishop.*] Manchester, The Board, 1966.

27 MANCHESTER REGIONAL HOSPITAL BOARD. *Report of the working party on standards of laundry staff in hospitals.* Manchester, The Board, 1964.

28 MANCHESTER REGIONAL HOSPITAL BOARD. *Report of the working party on standards of nursing staff for hospitals.* Manchester, The Board, 1957.

29 MARSH, DAVID C. *and* WILLOCKS, ARTHUR J. *Focus on nurse recruitment.* London, O.U.P. for N.P.H.T., 1965.

30 MILLER, STEPHEN J. *and* BRYANT, W. D. *A division of nursing labor: experiments in staffing a municipal hospital.* Kansas City, Missouri, Community studies, 1965.

31 MINISTRY OF HEALTH. *Administrative department.* London, H.M.S.O., 1963. (Hospital building note, 18.)

32 MINISTRY OF HEALTH. *Factors to be considered in the planning of non-resident staff changing accommodation.* (Unpublished.)

33 MINISTRY OF HEALTH. *Offices, shops and railway premises act, 1963.* London, M.O.H., 1965. (H.M.(65)17.)

34 MINISTRY OF HEALTH. *Residential accommodation for hospital nursing and midwifery staff.* London, M.O.H., 1963. (H.M.(63)83.)

35 MINISTRY OF HEALTH *and* SCOTTISH HOME AND HEALTH DEPARTMENT. *Clean catering: a handbook on premises, equipment and practices for the promotion of hygiene in food establishments.* London, H.M.S.O., 1963.

36 MINISTRY OF HEALTH. Central Health Services Council *and* SCOTTISH HOME AND HEALTH DEPARTMENT. Scottish Health Services Council. *Report of the joint committee on the care of the health of hospital staff.* [*Chairman: Sir Ronald Tunbridge.*] London, H.M.S.O., 1968.

37 MINISTRY OF HEALTH. Inter Board Study Group. *User requirements: section A—studies of space common to many departments.* London, M.O.H. [1966].

38 MINISTRY OF HOUSING AND LOCAL GOVERNMENT. *Swimming pools.* London, H.M.S.O., 1962. (Design bulletin, 4.)

39 MINISTRY OF LABOUR AND NATIONAL SERVICE. *Cloakroom accommodation and washing facilities in factories.* London, H.M.S.O., 1959. (Safety, health and welfare new series, 5).

40 MINISTRY OF LABOUR *and* CENTRAL OFFICE OF INFORMATION. *The offices, shops and railway premises act, 1963: a general guide.* London, H.M.S.O., 1964.

41 MINISTRY OF LABOUR. *Offices, shops and railway premises act 1963: explanatory book for employees.* London, H.M.S.O., 1964.

42 NUFFIELD PROVINCIAL HOSPITALS TRUST. *The work of nurses in hospital wards: report of a job analysis.* London, The Trust, 1953.

43 OFFICE OF HEALTH ECONOMICS. *Work lost through sickness.* London, The Office, 1965.

44 *Offices, shops and railway premises act, 1963.* London, H.M.S.O., 1963.

45 RAMSDEN, GERTRUDE A. *and* SKEET, MURIEL H. *Marriage and nursing: a survey of state registered and state enrolled nurses.* London, Dan Mason Nursing Research Committee, 1967.

46 REVANS, R. W. *Standards for morale: cause and effect in hospitals* [*a report on nursing staff*]. London, O.U.P., 1964.

47 SCOTTISH HOME AND HEALTH DEPARTMENT. *Ward design.* Edinburgh, H.M.S.O., 1963. (Hospital planning notes, 1.)

48 Ward staffing at the West Cumberland Hospital. *British hospital journal*, 1965, August 27, **LXXV**, 1640-1642.

49 WELSTEAD, A. G. Non-resident staff changing accommodation [Edinburgh City Hospital]. *Nursing mirror*, 1966, December 2, **123**, x-xii.

50 MINISTRY OF HOUSING AND LOCAL GOVERNMENT. *Space in the home.* London, H.M.S.O., 1963. (Design bulletin, 6.)

51 . . . *ibid.*, metric edition, 1968.

52 MORGAN, CLIFFORD T. *and others, editors. Human engineering guide to equipment design.* New York, McGraw-Hill, 1963.

53 [MINISTRY OF HEALTH.] *Report of the specifications working group on nurses' uniforms.* [*Chairman: R. Wright*]. [1968]. (Unpublished.)

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